

# THE AMERICAN JOURNAL OF PHARMACY.

---

MARCH, 1875.

---

## MIXTURA GLYCYRRHIZÆ COMPOSITA, AND PURIFIED EXTRACT OF LICORICE

BY HANS M. WILDER.

(Read at the Pharmaceutical Meeting, February 16th.)

The bent of modern pharmacy being towards elegance, we correspondingly find, by comparing magistral and official formulæ of old with those now in use, a desire to make preparations not only agreeable to the sense of smell and to the palate, but also pleasing to the eye, whenever it has been possible to do so without detriment to their medicinal activity. Of official preparations there are at least two\* which had better be left inelegant, as they were formerly—syrups of tolu and of ginger. As now prepared they look very nice, but are of very little value except as flavoring syrups, the medicinally active resins having been removed; a remark, by the way, made already in 1860 (vol. xxxii, p. 113) by the present editor.

The old, well-known "Brown Mixture" forms a solitary exception, looking to-day just as uninviting as when first made (1815). The late Aug. Duhamel (1840, vol. xi, p. 284), after giving the original formula (which does not contain sweet spirits of nitre), recommends to prepare it by percolation from licorice-root, with the addition of a small quantity of powdered extract, for the sake of the color.

Instead of percolation, I propose simply to substitute the *purified extract of licorice* of the German Pharmacopœia (extractum glycyrrhizæ depuratum) for the powdered crude extract, and to use gum arabic in lumps instead of the powder. The resulting Brown Mixture will be found to be of a pleasing dark brown color, by no means limpid, but *without a sediment*.

\* I think that some of the fluid extracts would be more reliable if less attention were paid to their appearance

Said purified extract is made by exhausting the crude extract of commerce with *cold* water (thus leaving behind all starch, gum and other extraneous matter), and evaporating to consistence of an extract. For the particulars of manipulation see Lochman's translation of "*Pharmacopœa Germanica*," p. 255. I think this purified extract might form a useful addition to the next revised *Pharmacopœia*, since it forms perfectly limpid solutions with water.

Since Dr. Ad. W. Miller, in the February number, has corrected the misspelling of the word *asa fetida*, I may be permitted to call attention to the incorrect use of the words *officinal* and *official*. These words are generally considered as synonyms, but this is not correct. *Officinal* applies to every drug and preparation found in drug stores, but *official* can only be applied to those drugs and preparations which are found in the *Pharmacopœia*; hence, everything official is, of course, officinal. For instance, quinoïdia is officinal, but not official; angelica and sodæ valerianas are both no longer official, but only officinal, having been dismissed at the last revision.

---

#### ON SUPPOSITORIES.

BY RICHARD V. MATTISON, PH. G.

(Read at the Pharmaceutical Meeting, February 16th.)

At our last meeting, the paper by Mr. Kennedy gave rise to some discussion, eliciting various ideas from the members.

The writer had hoped that the subject of suppositories had been thoroughly talked over, and the matter definitely settled *in favor of moulds*, but it seems that there is at least one yet unconverted; and in protest against the views expressed in that paper we offer the following remarks:

The paper states "that the process by moulding may answer the purpose of the manufacturers of pharmaceutical preparations who make them in large quantities and in a hurry, regardless of the equal distribution of the medicament."

Gentlemen, we contend that the process of moulding answers the purpose of the retail pharmacist much more perfectly and satisfactorily than they can be prepared by any process whatever, without the use of moulds.

Without moulds, suppositories cannot be made to compare in appearance, by one apothecary in a hundred, with those prepared with the

## *On Suppositories.*



use of moulds. They lack the smooth, glossy surface, the elegant shape, the perfect distribution of medicament, which characterize well-made moulded suppositories.

Another very important feature they lack, is the firmness, the solidity which is always apparent with suppositories when made by melting the cacao butter, and allowing it to solidify in the moulds.

Moulded suppositories, when properly prepared, never deposit the extract or heavy medicinal ingredient in the tip. Should this occur, it is evidence of imperfect skill in manipulation. It need not and should not ever occur.

There is much difference of opinion among pharmacists, as to whether the cacao butter should be melted or not, a large majority favoring the melting process—and it is certainly the best.

Mr. William McIntyre, of this city, differs from us in this respect, and proceeds as Mr. Kennedy in forming a plastic mass with the cacao butter and the medicament, and, instead of rolling in cylinders and shaping by hand, he cuts in short cylindrical pieces, and introduces into the hinged moulds. With simple pressure, by this means he produces, in a few minutes, suppositories nearly equalling in appearance those made in the regular way, the only difference being the absence of gloss and the almost invariably mottled appearance, thus rendering them much less elegant-looking, though certainly a very great improvement over the old foggy process of preparing them by hand. The process requires less time and deserves attention; but to furnish suppositories of uniform consistence and color requires considerable skill and care.

At the meeting, in Louisville, of the American Pharmaceutical Association, Mr. Geo. W. Sloan, of Indianapolis, took much interest in the discussion on this subject, and the mould exhibited here is an evidence of the concentration of his ideas upon its practical working.

It consists of a short brass barrel with piston, much, in fact, resembling a syringe, with the exception that the nozzle of the syringe is replaced in this by a stout block of brass, in which a conical cavity has been turned, resembling the apex of a minié rifle-bullet, and into which the barrel fits as in a socket. The medicinal ingredient is thoroughly incorporated with the cacao butter, and thirty grains of the mass weighed and introduced into the barrel which stands in the socket; the piston is now entered and forced home, the barrel removed from the socket and the finished suppository drops from the foot. One advantage of this mould is that the compression is so great that the finished product has the firmness of an ordinary moulded suppository, yet is liable to similar

1074

objections as Mr. McIntyre's in regard to elegance of appearance. To those gentlemen who are pledged to the "cold process," this mould we regard as very superior to anything ever offered to the profession.

In a recent letter to us, Mr. Sloan says: "The seat or foot of brass, in which is turned the conical cavity, should be *slightly* warmed, otherwise the point of the cone may break off, leaving an inelegant appearance. . . . Any practical pharmacist can, with half an hour's practice, prepare suppositories with this mould expertly and rapidly, it taking no more time than a lot of pills or powders. Now, for a manufacturer I could not recommend my machine, but for a dispenser, who has frequent calls at all hours for perhaps from two to twelve suppositories, I think the ease with which he can use this will at once suggest itself to his mind."

Just here we will make a digression in favor of manufacturers whom Mr. Kennedy so soundly berates.

We think the manufacturers of this country are generally as honest as the retail pharmacists. They do *not* "prepare suppositories, &c., regardless of the equal distribution of the medicament, never once thinking of the poor sufferer, who expects immediate relief only to be disappointed."

We have had some experience in the manufacture of the pharmaceutical preparations known as suppositories, and we have frequently, in turning out a gross of them, calculated the quantity upon the first trial, so as to mould one hundred and forty-four, no more nor less.

This, we think, is as accurate as any retail pharmacist is in the habit of preparing them. The point at issue seems to be this: Many of our otherwise intelligent writers, in recommending a pet process through the journals which has little to recommend it, base their main argument on the stereotyped formula of "manufacturers are so unreliable;" "they have no conscience," etc.

It is of no use; an imperfect or impracticable process cannot be foisted upon the profession and trade by means of any such nonsense.

In the opinion of the writer, the best mode of dispensing suppositories with dispatch, insuring at the same time a perfect distribution of their medicinal ingredients, avoiding all foreign matter, for the purpose of hardening and giving the satisfaction of knowing that the cones will melt at animal heat, is the following, which we offer to the readers of the "Journal," hoping it will be of benefit to those pharmacists who have experienced trouble and loss of time in their preparation:

Place the mould, preferably a hinged one, capable of holding twelve



or fifteen suppositories, upon ice, and put the quantity of cacao butter in a capsule, and melt quickly, thoroughly incorporating the powdered opium, for instance, with the melted cacao butter. Stir, while cooling, until brought to the consistence of thick honey; pour into the moulds, and allow to solidify. Upon opening the mould the suppository will usually drop out. No lycopodium or steatite is necessary, as there is no difficulty experienced through sticking.

The breakage will not amount to 1 per cent. of the number prepared. With these directions strictly followed, no separation will occur.

If an extract is used, dissolve in as little hot water as possible, and pour the melted cacao butter upon the diluted extract. Incorporate thoroughly, and proceed as above.

In dispensing, place white or pink cotton in a box, and place the suppository thereon; cover with cotton, and label as usual.

*Philadelphia, February 16th, 1875.*

---

#### SUPPOSITORIES.

BY J. KEMBLE.

*(Read at the Pharmaceutical Meeting, February 16th.)*

I have read with pleasure the paper of Mr. Kennedy on "Suppositories," in the "Journal of Pharmacy" for this month (February), and agree with him in most particulars of his plan, as being the most satisfactory mode of preparing them yet offered.

I discarded the mould long ago and always use the mortar and pestle, rubbing freely (with a little warmth if necessary) until the cacao butter (about twenty grains for each suppository) is reduced to a pliable mass, then incorporate thoroughly the ingredients ordered (having previously reduced to a fine powder—if santonin, sugar of lead, or any other ingredient requiring it), and roll out with the spatula into suitable length, cut into the number wanted, shape with the fingers, and, with the spatula, roll into a smooth cone.

Although the lycopodium, as directed by Mr. Kennedy, answers admirably to prevent sticking to the fingers, I prefer the *flour* of the elm bark, on account of its action on the mucous membrane of the anus and alimentary canal, while the lycopodium is of a non-absorbing character, and answers admirably to prevent adhesion, it also retards slightly the absorption of the material by the mucous membrane with which it comes in contact, the elm is just the opposite, and, being an

absorbent, becomes moistened and produces a very healing, softening mucilage to an inflamed mucous membrane. Care should be taken to have the elm very fine, and use just enough to prevent them from adhering to the fingers.

At the suggestion of A. W. Griffith, M. D., of this city, I have been using, for some time, waxed paper to wrap each suppository. It answers admirably to prevent adhesion, and keeps their shape in case they should become warmed. It is as well to advise the applicant to remove the covering before applying, as I had one case where they used the suppository without removing the waxed paper, and complained to the physician at his next visit "*that them things didn't do him no good.*"

*Philadelphia, February, 1875.*

#### NOTES ON PRONUNCIATION AND ORTHOGRAPHY.

BY ADOLPH W. MILLER, M.D., PH.D.

*(Read at the Pharmaceutical Meeting, February 16th.)*

Having recently had a new and very handsome edition of shop furniture labels offered to me, which is replete with such numerous and varied grammatical and orthographical errors, it occurred to me that it might be profitable to enumerate a few of the deviations from polite language which are of daily occurrence amongst pharmacists. No doubt the majority of well-informed druggists are acquainted with the points which I am about to present, yet in many cases daily usage seems to have accustomed their eyes and ears to these inelegancies. With perfect propriety, the general public looks up to the apothecary as an authority in pharmaceutical matters, and it is therefore important for him to be himself correct and accurate in the use of his language.

In this connection, I cannot too severely condemn the new book of Latin labels, which evidently has been carelessly prepared, without having been revised and corrected by competent authorities. The tendency of having such coarse blunders constantly before the eyes of the aspiring apprentice, undoubtedly is to engrave them on his memory, so that they can afterwards be eradicated only with great difficulty. Occasional errors of spelling may be pardoned on the part of ignorant painters, who prepare but a single label at a time; but when similar errors are duplicated perhaps a thousandfold by the lithographic press, they are certainly just so much the more reprehensible. I regard it, therefore, as a special discredit to our city—the cradle of American pharmacy—

that such barbarous Latin grammar and such wretched spelling should be disseminated from this locality.

Althæa, often written *althea*. There is authority for both forms, but althæa is preferred, as more in consonance with the derivation from *ἄλθαία*, and also on account of being in accordance with the German and the United States Pharmacopœias.

Apparatus (äp-pa-rä'-tus), frequently pronounced ap-pa-rä'-tus, for which there seems to be no authority.

Arabic (ä'-rä-bic), very often erroneously pronounced with the accent on the penultimate syllable, a-rä'-bic.

Boil (furuncle), frequently called *bile*. This was formerly correct, but has now become obsolete among good speakers.

Cacao, much oftener written and pronounced *cocoa* or *coco*. Although authorities for all these forms may be adduced, it will be infinitely better to adhere rigidly to the word as given by the Pharmacopœia, cacao, so as to avoid confusion with the products of *Cocos nucifera* and *Erythroxylon coca*.

Calcimine (China clay). Every painter who inscribes the word on his sign-board, appears to consider himself fully entitled to spell it entirely according to the dictates of his individual fancy, and, as a natural consequence, some of the most grotesque variations are met with. Although a few of the Dictionaries give *kalsomine*, derived perhaps from the Chinese *kas-ling*, I find it difficult to reconcile the term with any other derivation than that from *calx*, *calcis*. If this should prove to be its origin, it will tend to confirm the form calcimine, which is used in most of the trade-lists at present.

Caraway, sometimes written *carraway*, particularly in some of the New York lists. Johnson gives *carraway*, but the other Dictionaries agree on *caraway*, derived from the Arabic *karawya*, perhaps through the Spanish *alcarabueya*.

Carbolic (car-böl'-ic), often sounded car-böl-ic.

Centaur, very frequently written and pronounced *century*, in open defiance to its derivation from *Κένταυρος*.

Diarrhœa. An evident stumbling-block to the geniuses who feel impelled to invent panegyrics for their quack nostrums.

Diphtheria, sometimes written *diptheria*.

Eczema (ëk'-ze-ma), more frequently pronounced ec-zë'-ma.

Fœnum-græcum, in Latin, and fenugreek, in English, written in almost every possible manner rather than the proper one.

Glauber's salts, more frequently met with as *Glaubers'* salts.

Guaiac, sometimes written *guiac*.

Italian (it-täl'-yan) often pronounced i'-tal-ian.

Jamestown weed, vulgarly known as jimson weed.

Naphtha, sometimes written *naptha*.

Net, much better English than *nett*.

Ochre, often spelled *ocher*.

Pareira. As this word is derived from the Portuguese *parreira*, a vine, it ought properly to be sounded pa-rāy'-ra, in like manner as Janeiro (ja-nay'-ro). The German pronunciation, pa-rī'-ra, should be abandoned.

Pharmacopœia becomes *pharmacopœa* in connection with the phrase *Pharmacopœa Germanica*.

Platinum (plät'-i-num), often pronounced plat-i'-num.

Process (prös'-es), much more elegant than prō-cess.

Prussian, Prussiate, Prussic and Russian are frequently sounded with the ū long, while there is better authority for ŭ short in all of them; and it is certainly more elegant.

Pumpkin (pump'-kin), vulgarly, though almost universally, pronounced punk'-in.

Retort (rě-tort'), sometimes accented on the penultimate syllable, rē'-tort.

Rhubarb (rū'-bārb), occasionally pronounced *rhubūrb*; while, properly, the a should be sounded as in far.

Senna (sěn'-na), often called sēn'-na.

Stramonium, occasionally spelled strammonium, for which there seems to be no shadow of authority.

Taraxacum, derived from the Arabic *tarakhsbagūn*, is sometimes erroneously written *taraxicum*.

Tragacanth (träg'-a-canth), almost constantly pronounced tra'-je-canth, which appears but little better than the still more vulgar corruption to *gum dragon*.

Troche (trō'-ke), much more frequently pronounced with the soft sound of the ch.

Turmeric, sometimes written *tumeric*.

Vermilion, often written *vermillion*.

I have endeavored to call attention only to those subjects concerning which some druggists themselves appear to be at fault. It would be quite unprofitable to enumerate the perversions and mistakes of the illiterate portion of the public. I have also disregarded changes of names caused by the new chemical nomenclature, as very many of our

older friends have not yet thoroughly familiarized themselves with these, and in fact the whole subject seems to be still in a transition stage. In conclusion, however, I feel bound to denounce emphatically and unequivocally the following bad customs :

1st. Unnecessary combinations of Latin and English names in one phrase, as Semen Canary, Oleum Hemlock, Radix Doggrass, &c.

2d. The government of a Latin genitive case by an English nominative, as Tincture Rhei, Gum Opii, Infusion Cinchonæ.

3d. The use of pure Latin phrases without the proper terminal inflections, as Aqua Ammonia, Cannabis Indicus, Hydrargyrum cum cretæ.

4th. The pronunciation of the abbreviated forms of Latin pharmaceutical names ; such as, Pil. Ferr. Carb., Rad. Gran. Cort., Pulv. Sacch., &c.

Philadelphia, February 15th, 1875.

---

OREODAPHNE CALIFORNICA, NEES., NAT. ORD. LAURACEÆ.

BY JOHN P. HEAMY.

(Abstract from a Thesis presented to the California College of Pharmacy, Jan., 1875.)

*Botanical description.*—Flowers hermaphrodite ; perianth short, campanulate and deeply six-cleft. The divisions are somewhat rigid, equal and deciduous. Twelve stamens, of which the exterior nine are fertile, and the three interior are sterile. The sterile stamens are shaped differently from the fertile. Stigma is peltate and shortly-lobed. The flowers are in axillary umbels, surrounded by an involucre, which falls off during the development of the flowers. Fruit is a one-seeded, fleshy berry or drupe. Leaves are alternate, simple, lanceolate, slightly acuminate, petiolate, exstipulate, pinnately-veined, coriaceous, and marked with minute pellucid dots. The margin is entire, and the upper surface reticulated.

The *Oreodaphne Californica*, more familiarly known by the name of "California Bay Laurel," is an evergreen tree indigenous to California and the Pacific slope. It acquires considerable size and age, and grows abundantly throughout the State, particularly in the vicinity of ravines and moist, shady localities ; it flowers in June. The wood is much valued for ornamental cabinet-work, on account of its grain, which, when polished, presents a fine appearance. The tree is never attacked by insects, owing, as it is supposed, to the volatile oil it contains. Some of the native Californians have peculiar ideas concerning this tree. It is believed by them to aggravate asthmatic complaints, and that sleep-

ing in the vicinity of the tree will even produce asthma. That it is not without some action on the system has been proved by the inhalation of its odor, often producing dizziness and violent headache.

All parts of the tree contain volatile oil, but the leaves yield the most, about four per cent. being obtained by distillation. The oil is of a straw-color, limpid, and has a pungent aromatic odor, resembling a mixture of nutmegs and cardamoms. Its taste is warm and camphorous. It burns with a bright, smoky flame, leaving a carbonaceous residue. Its specific gravity .936. It is soluble in about 1000 parts water, and mixes in all proportions with alcohol and ether. The oil, when inhaled, produces dizziness and headache, and is therefore deemed to have a marked action on the nervous system, a property which has been applied to its medicinal use. Dr. Silver recommends the smelling of the oil in nasal catarrh and nervous headache, and speaks of successful results.

*Examination of the Oil.*—The method of investigation adopted was that recommended by Frederick Rochleder in his work "On the Proximate Analysis of Plants and Vegetable Substances."

The oil being neutral to test-paper, it was tested for aldehydes with a concentrated solution of bisulphite of soda, with which no combination could be effected, even after the application of heat.

A fragment of sodium introduced into the oil, previously dried by contact with chloride of calcium, produced no effect until a gentle heat was applied, when the metal dissolved slowly, with the disengagement of numerous gas bubbles, the oil assuming a reddish-brown color. It now possessed an alkaline reaction, and the peculiar pungent odor was not distinguished.

To prove whether the oxygenated body present was a compound ether, the oil was treated with ammonia without producing an amide, and no acid was separated by prolonged treatment with baryta.

By slow distillation, with an excess of coarsely-powdered soda lime, a colorless, limpid distillate was obtained, of an aromatic odor, resembling oil of nutmegs. It gave a slight reaction with sodium, but, after redistillation over soda lime, and again over sodium, it was obtained neutral. It possessed all the characteristics of a hydrocarbon, free from oxygenated bodies.

Two fluidounces of the crude oil, freed from moisture by contact with chloride of calcium, were introduced into a small glass retort, having a thermometer inserted in its tubulure. It was slowly heated up to 190° C., and about four drachms of a colorless oil was obtained.



The thermometer rose with the successive portions obtained as follows : three fluidrachms were obtained from  $190^{\circ}$  to  $202^{\circ}$  C., three fluidrachms between  $202^{\circ}$  and  $205^{\circ}$  C., three fluidrachms between  $205^{\circ}$  to  $220^{\circ}$  C., two fluidrachms between  $220^{\circ}$  to  $230^{\circ}$  C., and one fluidrachm between  $230^{\circ}$  to  $245^{\circ}$  C. The remaining oil in the retort possessed a very dark color and a thick consistency. Its odor was also less decided, the taste greatly less pungent, and it ignited less readily than the crude oil, burning with a brilliant, but sooty flame ; evaporated from bibulous paper, the vapor first given off was very pungent, while the latter portion was almost devoid of this odor. The boiling-points of the different fractions were next ascertained by heating them in a test-tube, with a thermometer inserted. The first fraction began to boil at  $175^{\circ}$  C., the second at  $180^{\circ}$  C., the third at  $185^{\circ}$  C., the fourth at  $196^{\circ}$  C., the fifth at  $214^{\circ}$  C., and the sixth at  $220^{\circ}$  C. The existence of two distinct oils in the crude oil is therefore quite probable ; but, by cooling the oil with ice for twenty-four hours, no separation could be effected.

Two fluidounces of the crude oil were carefully and very slowly distilled from a small glass retort, having a thermometer inserted, at a temperature not exceeding  $180^{\circ}$  C. ; about one ounce of an almost colorless distillate was obtained, possessing the penetrating, pungent odor of the crude oil to a high degree. On gradually raising the temperature to about  $210^{\circ}$  C., but not to exceed  $220^{\circ}$  C., a distillate of about six fluidrachms was obtained, which was of a light straw-color, less limpid, and had an acrid, pungent odor, differing greatly from that of the crude oil or the previous distillate. Its taste was sharp and camphorous. The residue in the retort had turned quite black, and of the consistency of syrup.

The fraction obtained at  $180^{\circ}$  C. was treated with sodium, with which no reaction was observed until the application of a gentle heat. The second fraction, obtained at  $220^{\circ}$  C., gave, with sodium, the characteristic reaction of an oxygenated oil.

To avoid the oxidizing action of the atmosphere and the decomposing influence of direct heat, two fluidounces of the crude oil were again distilled from a glycerin bath, and carbonic acid gas, dried by passing through sulphuric acid, conducted into the retort. The distillate obtained at  $175^{\circ}$  C. was colorless, limpid, and had lost nearly all of its pungency, having a pleasant aromatic odor, resembling oil of nutmegs ; it gave less reaction with sodium than in the previous experiment. The second distillate, at  $220^{\circ}$  C., was of a much lighter

color and a more agreeable odor, but retaining its previous pungency. All the oil which came over under, but not to exceed  $175^{\circ}$  C., was reserved for the separation of the hydrocarbon, while that between  $175^{\circ}$  and  $220^{\circ}$  C. was used for the separation of the oxygenated oil. The fractions having the lower boiling-point were rectified in an atmosphere of hydrogen over caustic potassa and over soda lime, both processes yielding identical results—the distillates being obtained absolutely free from oxygen when rectified over iodium. The portion with the higher boiling-point, distilled completely between  $180^{\circ}$  and  $210^{\circ}$  C., and was collected in three fractions, each of which commenced to boil between  $205^{\circ}$  and  $210^{\circ}$  C. when heated separately.

*Hydrocarbon.*—The pure hydrocarbon is a colorless, limpid liquid, possessing an agreeable aromatic odor, bearing some resemblance to a mixture of camphor and oil of nutmegs. Its taste is like that of cardamom. Its specific gravity is .894 at  $15.5^{\circ}$  C., and its boiling-point is  $175^{\circ}$  C. It is very volatile and highly inflammable, burning with a brilliant, slightly smoky flame. It is nearly insoluble in water; soluble in about five parts by volume of 95 per cent. alcohol. It dissolves iodine slowly, acquiring a deep red color. Nitric acid, added to it and heated, causes a violent reaction, with the disengagement of nitrous acid fumes, the production of a yellow color, and the disappearance of the odor of the hydrocarbon. Nitrous acid occasioned a rapid and violent reaction, with the production of heat. When heated with sulphuric acid, a thick, reddish mixture was obtained, becoming black, and disengaging sulphurous acid gas.

*Oreodaphnol.*—This is the oxygenated portion of the crude oil, and was obtained between  $175^{\circ}$  and  $220^{\circ}$  C. It is an oily liquid, of a light straw color, and of a pungent and penetrating odor. Its taste is hot and camphorous; its specific gravity .960. It is very inflammable, burning with a bright flame, giving off pungent vapors, and leaving a carbonaceous residue. Its boiling-point is  $210^{\circ}$  C. It dissolves iodine, with the generation of a slight heat, and the production of a reddish-brown solution. When treated with sulphuric acid a reaction was observed, accompanied with increase of temperature and the disengagement of sulphurous acid. Nitric acid exerted no action in the cold, but when heated, a violent reaction resulted, and nitrous acid fumes were given off. Treated with sodium, a reaction was observed.

*Oreodaphnene.*—Oreodaphnene is generated when oreodaphnol is distilled with glacial phosphoric acid, in an atmosphere of dry hydrogen

gas. Thus obtained, it exhibits a light straw color, and possesses a pungent terebinthinate odor. Its taste is hot and camphorous, followed by a feeling of acrimony, which remains in the mouth for a length of time. It is specifically lighter than oreodaphnol, its specific gravity being '934, and has a boiling-point of  $204^{\circ}$  C. It burns with a white flame, giving off very pungent vapors. It is soluble in about 4 parts of 95 per cent. alcohol. Iodine dissolves in it, producing a reddish-brown solution. Nitric acid changes its color to a deep red, with the elevation of temperature and disengagement of nitrous acid fumes. Nitrous acid gave a violent and rapid reaction, and sulphuric acid a reddish-brown solution. Treated with sodium, no reaction was observed. It is therefore the hydrocarbon of oreodaphnol, generated by the abstraction of water.

The hydrocarbon and the oreodaphnol are contained in the crude oil in about the proportion of one part of the former to two parts of the latter. It is upon the oreodaphnol that the peculiar pungency of the crude oil depends.

#### ON THE CONSTITUENTS AND PROPERTIES OF THE GENUS *POTENTILLA.*

BY JOHN M. MAISCH.

(Read at the Pharmaceutical Meeting, February 16th.)

The genus *Potentilla* belongs to the natural order of Rosaceæ, tribe Dryadeæ, and comprises mostly herbs, together with some shrubby plants, which are indigenous mainly to the temperate zones of the old and new continents. The generic name appears to have been formed from *potens*, powerful, in allusion to the reputed medicinal properties of some of the species. At the present time there are but few drugs officinal in any of the pharmacopœias which are obtained from plants belonging to the Dryadeæ, the most important being kousso, the inflorescence of *Brayera anthelmintica*, Kunth, and *tormentilla*, the rhizome of *Potentilla tormentilla*, Sibthorp; s. *P. erecta*, Nestler; s. *Tormentilla erecta*, Lin.; s. *T. officinalis*, Smith. The former, which, by Endlicher, is placed in the suborder Spirææ, but amongst the Dryadeæ, by DeCandolle, contains in its dry condition, besides very little volatile oil, a considerable proportion of tannin, some koussin, resins, &c., to which it owes its taste, which at first is somewhat astringent, but afterwards bitter, and to a certain degree acrid. The latter, *tormentil*, has, when fresh, a rather roselike odor, which is lost by drying, after which it retains an astringent taste, due to the presence of a considerable quantity

of tannin, from which the so-called tormentil-red, the red coloring matter of the drug, which is likewise present to the extent of about one-sixth of the weight of the rhizome, is probably a derivative.

Similar constituents will doubtless be found in the roots and herbs of the plants which are botanically allied to the genus *Potentilla*, if we may be allowed to judge from their sensible properties; the following plants of the suborder Dryadeæ (De Candolle's tribes of Sanguisorbeæ and Dryadeæ) contain in their roots and herbaceous portions very little or no volatile oil, as is evidenced from their slight odor, but they possess a more or less marked astringent taste, in some cases accompanied by some bitterness: *Geum rivale*, Lin., and *G. urbanum*, L., or avens; *Poterium sanguisorba*, Lin., and *Sanguisorba officinalis*, L., or burnet; *Alchemilla aphanes*, Lærs (s. *Aphanes arvensis*, Lin.), and *A. vulgaris*, L., or lady's mantle; *Agrimonia eupatoria*, Lin., or agrimony, and *Rubus villosus*, Aiton, and *R. canadensis*, Lin., the North American blackberry and dewberry, the rootbark of which is officinal in the U. S. Pharmacopœia.

Of the genus *Potentilla*, of which about one hundred species are enumerated, *tormentil* is the only one occasionally still used in medicine, though formerly several species now obsolete have been employed.

*Potentilla anserina*, Lin., silver weed, is indigenous to Europe and the northern portion of the American continent. Both the herb and the perennial root have a mild astringent taste, and are said to have been used by the Indians as an antidote to snake-poison; while in Europe, it was employed in diarrhœa, hemorrhages, pulmonary complaints, some hepatic disorders and in dropsy. The leaves are radical, interruptedly pinnate; the leaflets, 9 to 19 in number, oblong, deeply serrate, silvery white and downy underneath.

*P. fruticosa*, Lin., shrubby cinquefoil, likewise inhabits the northern portions of the Northern hemisphere. The five to seven pinnæ are linear to lanceolate oblong, entire, silky underneath, and have a mild astringent and bitterish taste. They are used by some Siberian tribes like tea, and were formerly reputed to possess febrifuge properties; externally, the leaves were used as a vulnerary.

*P. rupestris*, Lin., is a native of mountainous regions of Europe and Siberia. The radical leaves are pinnate, and the stem-leaves usually three-lobed; they have an astringent taste and are used in Siberia like tea.

*P. palustris*, Scop. s. *Comarum palustre*, Lin., marsh-cinquefoil,

occurs in cool, boggy localities of the Eastern and Western hemispheres. It is easily distinguished from the preceding and following species, which bear yellow flowers, by its dark purple petals. The three to seven leaflets are oblong-lanceolate, sharply serrate, hoary beneath, and have a somewhat astringent taste.

The species just mentioned have the leaves pinnate; in the following they are palmate, and mostly composed of five leaflets:

*P. argentea*, Lin., silvery cinquefoil, occurs in dry localities of the old and new world. The wedge-oblong leaflets are entire towards the base, deeply incised and almost pinnatifid near the apex, green and smooth above, and silvery canescent beneath; their taste is astringent.

*P. tormentilla*, Sibth., tormentil, a native of Europe, grows in meadows, and has obovate or wedge-lanceolate, deeply serrate, green and somewhat shining leaflets, possessing an astringent taste, similar though somewhat weaker than the rhizome.

*P. reptans*, Lin., creeping cinquefoil, is a European and Asiatic plant, growing in damp localities. Its thin, creeping stems bear solitary flowers on long peduncles, and are of a golden-yellow color; the leaflets are elliptical to oblong-obovate, sharply serrate, bright green and slightly hairy above, paler and somewhat pubescent beneath. The taste of the root and herb is sweetish and astringent. This plant (or the tormentil) was probably the *pentaphyllon* of the ancients.

As far as may be judged from the taste, and from the few published chemical experiments, all the species enumerated before contain some tannin, upon which the comparatively feeble medicinal properties mainly depend. The indigenous *P. canadensis*, Lin., the common cinquefoil, or five-finger, resembles the former in taste, and, like them, may be supposed to act like a mild astringent. In the January number of the "Charleston Medical Journal and Review," however, this plant is highly recommended for other purposes. Dr. Wm. Hauser, of Bartow, Jefferson county, Georgia, writes of it as follows:

"It is the best and most powerful *sudorific* I have ever found. And like all of its class, it is, under certain circumstances, diuretic also. Dr. Edwin Le Roy Anthony, son of Dr. Milton Anthony, founder of the Medical College of Georgia, assured me, many years ago, that he had cured gonorrhœa with it. But my purpose, in this short article, is to ask the attention of the medical profession to it in the treatment of peritonitis of any kind, but especially *puerperal peritonitis*. In a large practice of more than twenty years, I have never found anything,



nor all other things combined, to equal this simple plant in the treatment of this exceedingly painful, dangerous and sometimes stubborn disease. I have never failed with it once in all this time, to the best of my recollection. A recent case that gave much trouble and anxiety to two of my honored medical brethren, has brought it afresh to my mind, though I have not been in practice myself for eight years. My method with it is simply this: Make as strong a decoction of the plant (leaves, vines and roots) as possible, and give the patient, at any stage of the case, large draughts of the tea, as hot as she can drink it, every half hour, or oftener, till she be thrown into full perspiration. All pain and fever will soon be gone, and then you have the entire mastery of the case."

Some years ago, Dr. Richard Moore, of Sumter District, S. C., called attention to this plant as an efficient and useful remedy in the treatment of chronic colds, threatening phthisis; he used it in the form of decoction.\*

Both Dr. Moore and Dr. Hauser, name the plant employed by them *Potentilla reptans*. The Linnæan plant bearing this name, however, is a native of Europe and Asia, and does not occur in this country; it is represented on this continent by *Potentilla canadensis*, Lin., which resembles it, and is a rather variable species, growing in dry fields and moist thickets. *P. sarmentosa*, Wild., *P. caroliniana*, Poir., *P. simplex*, Michaux and *P. pumila* Pursh, are now regarded as mere varieties of this species, which occurs from North Carolina to Mississippi, and northward throughout Canada. The plant is, however, distinguished from *P. reptans*, by the latter having many slender, nearly smooth and purplish stems, the leaves on longer petioles, leaflets elliptical to obovate, obtuse, serrate and somewhat hairy, the lateral pairs approximate, or united at base; stipules small oval-lanceolate, entire or few-toothed; petals yellow, obcordate. *P. canadensis* has even the summer runners thicker, green, or occasionally purplish, always silky hairy; stem-leaves on shorter petioles; leaflets obovate oblong, rather acute, coarsely serrate, hairy; stipules ovate, acutely toothed; petals roundish obovate, entire or notched.

The botanical characters, it will be observed, are sufficiently distinct for the two species, although their sensible properties are alike as far as odor and taste are concerned. It is scarcely to be supposed that the

\* See "Resources of the Southern Fields and Forests." By Dr. F. P. Porcher, 1869, p. 166.



American plant be possessed of more potent properties than the majority of the plants of the same genus and tribe mentioned above ; but the statements made of its efficiency are such that they invite to a carefully-undertaken trial.

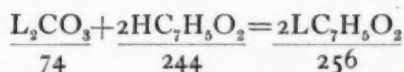
# BENZOATE OF LITHIUM.

BY F. B. SHUTTLEWORTH.

This salt has been proposed as a remedy for certain disorders of the urinary organs, and appears to possess advantages over the forms in which lithium has heretofore been exhibited. The comparative insolubility of the carbonate has always proved a bar to its general employment, and though the citrate is in this respect much more eligible—only twenty-five parts of water being required for solution—yet the salt is of an unstable and deliquescent character, and somewhat troublesome to prepare and dispense. The benzoate is not open to any of these objections, and has the additional advantage of containing, in combination, an acid which is itself of no inconsiderable repute in the treatment of patients suffering from various forms of urinary deposits.

This salt is not usually to be met with in commerce, but is not difficult to prepare. I am not, however, aware of any work of reference which contains any directions or formula for this purpose ; and am, therefore, induced to believe that a few remarks on the subject may prove acceptable.

Benzoate of lithium may be most advantageously prepared from the carbonate :



In a wedgewood dish put one ounce, avoird., of carbonate, mixed with nine ounces of water. Heat gently by aid of a spirit lamp, and add gradually, and by small portions, benzoic acid, until effervescence is no longer produced. About three and a quarter ounces will be required. Evaporate to dryness, stirring constantly, and reducing the heat towards the close of the operation. The product may, for convenience, be powdered. The yield will be nearly three and a half ounces.

By following this process, a much less quantity of water, and consequently less evaporation, will be needed than if the benzoic acid be

dissolved and the carbonate added thereto. If, by reason of impurity or discoloration of the benzoic acid, it is necessary to filter the solution, three ounces more water may be added before evaporation; and, if required, a little purified animal charcoal may be used. The benzoate may be obtained in crystals by withdrawing the heat, and setting the solution aside immediately after the benzoic acid is all added.

Watts\* says the lithium salt of benzoic acid is uncrystallizable. This is incorrect; the benzoate may be crystallized without the slightest difficulty. It takes the form of glistening, pearly scales, or laminæ, somewhat resembles iodide of cadmium, but less lustrous. The crystals feel soapy or greasy to the touch; have a cool, sweetish, and not disagreeable taste, and are perfectly permanent in the air. The solution has an acid reaction.

I have found the salt to be soluble in three and a half parts of water at 60° F.; in two and a half parts at 212° F.; and in ten parts of cold alcohol, specific gravity 838.—*Canadian Pharm. Jour.*, Feb., 1875.

Toronto, Jan. 13th, 1875.

#### THE JALAP PLANT (*EXOGONIUM PURGA*.)

Of all autumn-flowering hardy plants, there is, perhaps, none more beautiful than the Jalap (*Exogonium purga*). Of its complete hardiness there can be little doubt. It has lived at Bitton without any protection for four years, and each year it has flowered beautifully. We have also heard of its doing well at Drayton Beauchamp, Kew, and Fulham. We believe it has also lived out of doors, and flowered, in the Edinburgh Botanic Gardens. Mr. Ellacombe grows it in a sheltered corner, and gives a tall wire cage to grow up, with a spreading top. It does not flower in the lower parts; but the entire top, and the pendent shoots, become a mass of most lovely blossoms. At Bitton, if not checked by late spring frost, it comes into blossom early in September, and continues to flower till cut down by frost. Mr. Ellacombe states that, if he were to plant another, he should place it under a south wall near a peach or apricot tree, and let it wind its way through the branches. With a very little training, it would do no injury to the tree; and, in such a situation, it would probably flower earlier, and perfect its seeds. As regards its history, it gets its name of jalap from its native habitat, Xalapa, in Mexico. It is the true jalap of com-

\* "Dict. of Chem.," p. 552.

merce ; by which is not meant that it alone produces genuine jalap, but that it is *the* plant that gives the name to the medicine. The best jalap is made from the *Exogonium* ; but good jalap may also be got



LEAVES, FLOWERS, FRUIT, ROOT, ETC., OF THE JALAP PLANT.

from many other species of the *Convolvulaceæ*—even from our British species. “*Convolvulus arvensis*, *Soldanella*, *macrocarpus*, and probably many others, may likewise be used with equal advantage,” says Dr. Lindley. The habit of the plant is well given in the “Botanical Reg-

ister," v, 33; but the color is not bright enough. It is also figured in the "Botanical Magazine," v, 73. Can any one say if *Convolvulus* (*Batatas*) *Jalapa* is in cultivation, and if it has been found to be hardy? *E. purga* has, as will be seen, roundish tubers of variable size, those of mature growth being about as large as an orange, and of dark color. These, as we have said, are the true jalap tubers.

With reference to the foregoing question as to *Convolvulus Jalapa*, Mr. J. Tyerman, of Torquay, writes to the "Garden" as follows: "There is a plant of it in the Botanic Gardens at Liverpool, where it has been for the last fourteen or fifteen years, growing on a bed of gravel, the roots being about the size and shape of the double cocoa nut. I do not think it has been tried in the open ground; perhaps the curator (Mr. J. Richardson) will possibly act on the suggestion, and give it a trial, and report the result. *Exogonium purga* matured seeds with me this season for the first time; these are now in the hands of Mr. Thompson, of Ipswich, and I have no doubt that it has done so, and much more freely, in the College Botanic Gardens at Dublin, where both Mr. Ellacombe's and my own plants originally come from, nine or ten years ago. Both the jalap and the scammony grow luxuriantly with me, and I originally intended to recommend their cultivation on a large scale in this country for medicinal purposes; but I find that although they grow freely, and produce, like the common bindweed, abundance of fleshy root-stems, from which they may be readily increased, they produce but slowly the tuberous roots from which the active property is extracted; and those are very deficient in resin, compared with prime imported samples. Judging from my short experience, it would require from four to six years to fully mature a crop, which would render it impossible in this country."—*Pharm. Jour.*, (London,) Jan. 9th, from the Garden.

#### DEER TONGUE IN PERFUMERY.

BY ADOLPH W. MILLER, M. D., PH. D.

(Read at the Pharmaceutical Meeting, February 16th.)

Deer tongue, or Southern vanilla (*Liatris odoratissima*, Willd.), seems destined to become a commercial staple of some importance, chiefly, so far, on account of its large consumption as a flavor for tobacco. It is stated to be also used to some extent in the South for the purpose of preserving clothing, woolen fabrics, etc., from the attacks of moths.

To the best of my knowledge, these are the only applications which have yet been found for these highly odoriferous leaves. The chemistry of deer tongue has been treated of very ably and exhaustively by Prof. Procter, in the 31st vol. of this Journal (1859), proving it to contain a large percentage of coumarin.

As it has been a matter of surprise to me that no perfumer has, as yet, availed himself of the Southern vanilla, I have contrived the following formulæ, which, in my opinion, furnish quite satisfactory results, and I invite a special examination of the specimens herewith presented.

*Tincture of Deer Tongue.*—Percolate two ounces of ground deer tongue leaves with cologne spirits until one pint of tincture is obtained. This is of a handsome light-green color, so that it can be readily employed as an addition to various extracts, colognes or toilet waters. In its pure state, it may be used as a substitute for the essence of May wine (a tincture of the fresh leaves of *Asperula odorata*), which is used extensively in Germany as a pleasant addition to wine, converting it into the so-called May drink (*Maitrank*).

*Extract of New-mown Hay.*

Tincture of Deer Tongue,	8 ounces.
Extract of Rose from Pomade,	4 "
" Orange Flower from Pomade,	4 "
Oil of Rose, Virgin Serail,	16 drops.

*New-mown Hay Sachet Powders.*

Ground Deer Tongue Leaves,	2 ounces.
" Florentine Orris Root,	
" Damascene Rose Petals,	
" Orange Flowers,	of each, 1 ounce.
Mix thoroughly and sift.	

*Sachet Bouquet.*

Ground Deer Tongue Leaves,	2 ounces.
" White Santal Wood,	$\frac{1}{2}$ ounce.
" Florentine Orris Root,	1 "
" Ambretta Seeds,	$\frac{1}{2}$ "
" Benzoin,	$\frac{1}{4}$ "
" Damascene Rose Leaves,	1 "

Mix, and sift to remove coarse particles.

"Gray's Botany" states that the leaves, when bruised, exhale the odor of vanilla, but I cannot confirm the assertion. I have tried various com-

binations of vanilla and deer tongue, with a view to its use as a flavor, but each of them was unsatisfactory. The odor and taste of coumarin appear to be so much stronger and so much more persistent than that of vanilla, that it is only spoiling good vanilla to add tonka or deer tongue to it.

Deer tongue is specially adapted to imitating the odor of new-mown hay, as the perfume of this also resides in the coumarin contained in *Anthoxanthum odoratum*, Lin., or sweet-scented vernal grass.

#### MATICO.\*

As to what plant is the "real original" Matico, there seems some doubt. There are at least "two Richards in the field," and each has some claim to the title. According to Hartweg, whose remarks are quoted in a recent number of the "Pharmaceutical Journal," "Matico is the vernacular name applied by the inhabitants of Quito to *Eupatorium glutinosum*, or the 'chessalonga' in the Quichua language. It forms a shrub three to five feet high, which is common in the higher parts of the Quitinian Andes, where its properties were discovered some years back by a soldier called Mateo, better known under his nickname Matico (little Matthew), who, being wounded in action, applied accidentally the leaves of some shrub to his wound, which had the immediate effect of stopping the bleeding. This shrub happened to be the Chessalonga, which has since been called, in honor of the discoverer, Matico. That it is the true Matico of the inhabitants of Quito and Riobamba, I have not the slightest doubt; both the leaves and specimens have been gathered by myself, and upon comparing the latter with Kunth's description I found them to agree exactly with his *Eupatorium glutinosum*."

This origin of the name Matico, it may be remarked *par parenthèse*, reminds us of that of the genus Quassia, which commemorates a negro slave named Quassy, who first discovered its good qualities as a febrifuge, and employed its bark and wood as a secret remedy against the malignant endemic fevers which were so frequent in Surinam. He was at last induced to part with his secret for a considerable sum, by a Swede named Rolander, by whom, in 1756, the wood was first brought to Europe. This perpetuation of the name of the discoverer in association with the plant connected with him is common enough

\* From the "Gardeners' Chronicle."



not only in scientific but in popular use; thus the "Tinker's weed" of North America (*Triosteum perfoliatum*) has reference to a Dr. Tinker, who was the first to employ it in medicine as an emetic; and Mr. Ransted; the introducer of the common yellow toad flax (*Linaria vulgaris*) to the United States, where it has become an agricultural pest, is commemorated in its popular name, "Ransted weed."

In spite of this identification of *Eupatorium glutinosum* as the original Matico, it is certain that the plant so called in commerce is in most cases not that species, but an *Artanthe* (*A. elongatum*), the *Piper angustifolium* of older writers. This was introduced to English medical practice by Dr. Jeffreys, of Liverpool, who published an account of it in the "Lancet" for 1839. It was recommended for use in cases of diarrhœa and cholera, but its real value is as a styptic, not from any astringent properties, but from its mechanical action, the structure of the leaf promoting the coagulation of the blood. It is chiefly imported from Peru, but specimens in the Exhibition of 1851 were from the province of Chiquas, in the eastern extremity of Bolivia. Another species of *Artanthe* (*A. adunca*) is sometimes substituted for *A. elongata* in commerce. This was the case during the American war in 1863. According to Professor Bentley, however, "it may be at once distinguished from the official Matico by being in a less compressed state, by the upper surface of its leaves not being so tessellated or rough, and by the almost entire absence of pubescence on the under surface of the leaves." The true officinal Matico, as imported, "consists of the dry leaves, stalks and spikes (some unripe, others ripe), more or less compressed into a lump, which has a greenish color. The leaves are from two to eight inches long, veined and tessellated on the upper surface, downy beneath, with an aromatic slightly astringent warm taste, and an agreeable, aromatic odor."

Another plant, which has also obtained the name of Matico, is *Waltheria glomerata*, the leaves of which are used as a vulnerary in the Panama region, where the shrub is known as Pado del Soldado, or Soldier's Tree; and a story similar to that given above is connected with it. Dr. Seeman says that "the same story, with more or less variation, is told of many other vulneraries of Spanish America." Martius was inclined to consider that the true Matico was furnished by a species of *Phlomis*, but that genus is only represented in America by *P. fruticosa*, which has been collected in Mexico, where it was probably an introduction.—*Pharm. Journ. and Trans.*, Jan. 2, 1875.

## THE ECONOMIC USES OF THE HIBISCUS FAMILY.

As attention is now being directed prominently in France to the *Hibiscus esculentus* as a paper-making material, a few words of description as to its economic uses and those of the allied species will not be out of place. Its value as a fibrous plant has long been recognized, and the late Dr. Riddell, of India, often exhibited paper, cordage, etc., made from it, at the various International Exhibitions, and before the Society of Arts. This plant, though indigenous to the West Indies, has long been naturalized in India. Its pods produce the well known vegetable known as Ochro by the English, Gombo by the French, Chimbombo by the Spanish, and Bendikai in India, which is so much esteemed in imparting a mucilaginous thickening to soups. The young pods are gathered green, and pickled like capers. The seeds may be boiled like barley, and the mucilage which they contain is both emollient and demulcent; they have also been recommended when roasted as a substitute for coffee. An analysis, given by E. Landron, of the seeds shows the following composition:

Water,	.	.	.	.	.	.	.	.	.	4'21
Oil,	.	.	.	.	.	.	.	.	.	16'50
Resin,	.	.	.	.	.	.	.	.	.	1'21
Mineral matters,	.	.	.	.	.	.	.	.	.	6'38
Undetermined,	.	.	.	.	.	.	.	.	.	71'70
										100

The oil has a disagreeable flavor, which would prevent its use as a comestible, but containing much stearic acid, it could be used for soap-making. The oil-cake remaining would form a rich manure, as it contains 4'18 per cent. of nitrogen and 1'55 of phosphoric acid. Messrs. Boujon Brothers have taken out a patent, in France, for making paper from the fibre, and propose introducing the culture of the plant into Algeria. They prepare the fibre, solely by mechanical means, in a current of water, and without any bleaching agent, and the pulp, washed and bleached, makes a strong, handsome paper, equalling that from pure rags. The different parts of the stem and the fruit yield in washing a large quantity of gummy mucilage, to which the name of gombin has been given, and which can be used by pharmacutists for making a pectoral lozenge called *pâte de gombo*. Besides this substance, the plant contains a resin which reddens under the influence of acids and bleaching agents. This obstacle is removed, however, by decomposing, in

the bleaching process, the chloride of lime in sulphate of alumina, which precipitates the resin at the same time. The following is a proximate analysis of the stem of the plant :

Water,	.	.	.	.	.	.	.	.	.	13.82
Gombin,	.	.	.	.	.	.	.	.	.	19.50
Cellulos,	.	.	.	.	.	.	.	.	.	60.75
Resin,	.	.	.	.	.	.	.	.	.	0.93
Mineral matters,	.	.	.	.	.	.	.	.	.	4.75
Loss,	.	.	.	.	.	.	.	.	.	0.25
										<hr/>
										100

This proportion of cellulose is a little below the industrial yield, which is about sixty-six per cent. We pass on now to notice a few other species of Hibiscus. The musk seed of commerce (*Abelmoschus moschatus*) is the "Kala Kustooree" of the Hindoos, the "Hubbul mooshk" of the Arabs, a celebrated ingredient used in their coffee with such wonderful improvement of its flavor as to have led to its introduction for the same purpose amongst Europeans even in India. The sorrel plant (*Hibiscus Sabdariffa*) is cultivated in most gardens in South Africa and India, because its calyces, as they ripen, become fleshy, and being of a pleasant acid taste, are much employed for making tarts as well as an excellent jelly. A decoction of them, sweetened and fermented, is commonly called, in the West Indies, sorrel-drink. The leaves are used in salads, and the root is said to be a purgative. The stem is cut when in flower, and a fibre got from the bark, which is rather fine and silky. Excellent tow and hemp might be made from several species of Hibiscus, the staple being long, fibres uniform, silky and fine. Cordage of greater compactness and density could, therefore, be made from them than from many of the coarser fibres. All plants of this kind should be sown thick, for the simple reason that they will grow tall and slender, thus giving a greater length of straight fibre-yielding stem. No plant yielding fibre should be gathered for more than one or two days before prepared, as the drying up of the sap stains the fibres, and the sooner the fibre is cleaned, the stronger and whiter it will be; newly-cleaned fibres must not be exposed to the sun, as they acquire a brown tinge, and it should be recollected that all plants are usually in greatest vigor when in flower or fruit, and it is at that time they yield the greatest amount of fibre. The bark of the Deckanee hemp (*Hibiscus cannabinus*), is full of strong fibres, which the inhabitants of the Malabar coast prepare and make into cordage,

and it seems as if it might be worked into good, fine thread of any size. It goes by various names in different parts of India. The fibres, which are from five to ten feet long, are harsh, and more remarkable for strength than fineness, but might be improved by care. It is as much cultivated for the sake of its leaves as its fibres, which former are acidulous and eaten by the natives. The bark of *Hibiscus furcatus*, a very prickly plant, yields abundance of strong white fibre, but not so tough and tenacious as the hemp-like Hibiscus. The shoe flower plant or China rose (*Hibiscus rosa sinensis*) is a shrub twelve to fifteen feet high. In China they make its handsome flowers into garlands and festoons, on all occasions of festivity and even in their sepulchral rites. The astringent petals of the flowers are used for blacking shoes, and the women also employ them to color their hair and eyebrows black; they are also eaten by the natives as pickles. The flowers are used to tinge spirituous liquors, and the petals when rubbed on paper communicate a bluish-purple tint, which forms an excellent substitute for litmus paper, as a chemical test. The leaves are considered in Cochinchina as emollient and slightly aperient. The bark furnishes, a beautiful bast, strong, white and flexible. Mahoe fibre is obtained from the *Hibiscus elatus* of Linnæus, the *Thespesia populnea* of Correa. The *Hibiscus trilobus*, Sev., furnishes a good brownish flax. The Malvaceæ family is perhaps one of those which furnishes the most and best fibre.—*Jour. of Applied Science*, Feb., 1875.

#### SOME PHYSICAL PROPERTIES OF QUINIA.\*

BY JULES REGNAULD.

Several chemists have during recent years published the results of their experiments upon the solubility of the salts of quinia, and they have specially occupied themselves with the substitution of the ordinary sulphate of quinia by a compound more soluble in water and better adapted for hypodermic use. The author proposes to test the correctness of the frequently discordant statements by means of well-defined salts prepared by himself from perfectly pure quinia. In the present preliminary note he treats of the solubility of the free alkaloid in water, alcohol, chloroform and sulphuric ether.

*Solubility in Water.*—Pelletier and Caventou, in their "Analyse chimique des Quinquinas," say simply, "Boiling water dissolves about

\* "Journal de Pharmacie et de Chimie" [4], vol. xxi, p. 9.

0.005 of quinia; cold water dissolves still less." From this it might be inferred that the solubility of quinia in water is pretty considerable; for, calculating according to the co-efficient 0.005, one gram of quinia would dissolve in 200 grams of boiling water, and would require a larger, but undetermined, quantity of cold water. The greater portion of French standard treatises give different numbers, but unfortunately do not indicate their origin. The disagreement may be illustrated by the following examples:

*Quantity of Water required to Dissolve one gram of Quinia.*

According to	At + 15° C.	At 100° C.
Dumas . . . . .	—	200 grams.
Gerhardt . . . . .	350 grams . . . . .	400 "
Pelouze and Frémy . . . . .	400 " . . . . .	150 "
Wurtz . . . . .	400 " . . . . .	350 "
Berthelot . . . . .	At + 15° C. 480 grams. . . . .	200 "

According to the same authors one gram of ordinary sulphate of quinia,  $(C_{20}H_{24}N_2O_2)_2H_2SO_4$ , requires about 750 grams of water (the author has found about 755) at 15° C. to dissolve it. From which it would result that an aqueous solution of quinia upon being neutralized by sulphuric acid, throws down, under the form of a deposit of insoluble sulphate, nearly half the alkaloid it contained; an inference manifestly incorrect. In fact, the figure given for the solubility of quinia in water by Pelletier and Caventou, and other French chemists, is exaggerated.

Dragendorff, in his "Toxicologie," represents the solubility of quinia in water as 1 in 1667; this number, though widely differing from the preceding, is still, according to the author's experiments, considerably beyond the true one. Three experiments were made by him with pure quinia, from which all traces of the other cinchona alkaloids had been carefully removed. This quinia was anhydrous, and presented the appearance of vitreous, amorphous, completely colorless and transparent scales. Finely pulverized in a glass mortar, and then agitated during twenty-four hours with a large excess of pure distilled water, previously made to boil, it yielded a solution which, after being kept during two hours at a temperature of 15° C., gave the following results:

	Saturated Solution at 15° C.	Pure Quinia dried at 110° C.
1st Experiment, . . . . .	49.8278 grams.	0.025 grams.
2d " . . . . .	49.9780 "	0.024 "
3d " . . . . .	49.6950 "	0.025 "

These figures give for each 100 grams of saturated solution at 15° C. :

	Pure Quinia dried at + 110° C.
1st Experiment, . . . . .	0.0501 grams.
2d " . . . . .	0.0480 "
3d " . . . . .	0.0503 "

Or a mean of 0.0494 gram of quinia in each 100 grams of solution ; from which the author concludes that the co-efficient of solubility at that temperature is 1 in 2024 ; or that one gram of pure quinia requires for its perfect solution at 15° C. rather more than two litres of distilled water.

The solubility is considerably increased at 100° C., as stated by most authors, and as is shown by the following experiments :

	Water saturated at 100° C.	Pure Quinia dried at 110° C.
1st Experiment, . . . . .	64.5430 grams.	0.0870 grams.
2d " . . . . .	65.5265 "	0.0840 "

Or a mean for each 100 grams of 0.1314 gram ; from whence the author concludes that the co-efficient of solubility of quinia in water at 100° C. is 1 in 760. Therefore water saturated with quinia at 100° C. deposits in cooling to 15° C. nearly two-thirds of the alkaloid originally dissolved.

*Solubility in Alcohol.*—The author used absolutely pure and anhydrous ethylic alcohol. One carefully conducted experiment gave a result so nearly concordant with what is stated in chemical treatises that it was not repeated.

Absolute alcohol saturated at 15° C.	Quinia dried at 110° C.
41.454 grams.	19.428 grams.

This is equal to 46.866 grams to 100 grams of solution, and the co-efficient of solubility at 15° C. would be 1 in 1.133 ; in other words, 1 gram of pure quinia will dissolve in 1.133 gram of absolute alcohol at 15° C. Several chemists have mentioned the great solubility of quinia in alcohol. Dragendorff and Wurtz have it as 1 in 2, which is too low. The difference, however, probably depends upon a slightly hydrated alcohol having been used, for the solubility of quinia in alcohol decreases rapidly with the smallest addition of water.

*Solubility in Chloroform.*—100 grams of chloroform saturated at 15° C. gave 34.177 grams of quinia dried at 110° C., being equal to 1 in 1.926. This number is substantially in agreement with Pettenkofer's statement of 55 per cent., or 1 in 1.801. The co-efficient 1 in 6.58,



corresponding to 15.2 per cent. (Schlimpest), mentioned by Dragendorff, is evidently erroneous.

*Solubility in Sulphuric Ether.*—The ether used in these experiments was entirely free from aldehyde, alcohol and water.

	Ether saturated at 15° C.	Quinia dried at 110° C.
1st Experiment, . . . .	32.3545 grams.	1.3990 grams.
2d " . . . .	18.6590 "	0.7965 "

Or a mean equal to 4.2314 of quinia to each 100 grams of solution. From which the author concludes that the co-efficient of quinia in pure sulphuric ether at 15° is 1 in 22.632. This value is very different from that indicated by Dragendorff, who, according to Pettenkofer, supposes that 100 grams of ether dissolve 1.66 grams of quinia, or equal to 1 in 60, instead of 1 in 22.

*Observations upon Aqueous Solution of Quinia.*—The determination of the exact composition of the aqueous solution afforded the author opportunities for making numerous experiments upon some of the reactions of this alkaloid. The solution of 1 part in 2 000 is bitter, and presents very clearly the emerald-green coloration under the influence of chlorine and ammonia. Gallo-tannic acid causes an abundant precipitate. By means of mixtures consisting of definite proportions of this solution and distilled water, the author ascertained that it is necessary to dilute one part of this solution of 1 in 2,000 with ten parts of distilled water before the opalescence resulting from the formation of the tannate ceases to be visible in the sunlight, gathered in the focus of a convergent lens; 1 part in 20,000 is therefore the extreme limit of the sensitiveness of this reagent. This experiment shows that the solubility at a temperature between 10° C. and 20° C. is extremely slight, and that some statements that have been made upon this point are incorrect.

The fluorescence of the aqueous solution of 1 part of pure quinia in 2,000 is almost invisible if the solution be examined in the direct sunlight. It is, however, perceptible up to an extreme limit of 1 in 20,000, if, according to the method proposed by Stokes,\* the rays converging from a lens or a concave metallic mirror be thrown upon it.

It is known that the presence of an excess of sulphuric acid increases the fluorescent power of quinia, and the author has found that this singular influence renders the solution of 1 in 20,000 twenty times more energetic. In fact, he has found that a solution of 1 part of

\* "Philosophical Transactions," 1852, p. 463.

quinia in 500,000 of water, when sulphuric acid has been added, possesses still a visible fluorescence, which is instantly destroyed upon the addition of hydrochloric acid, as stated by Stokes.\*

From the facts above stated the author deduces the following propositions:

(1). The solubility of quinia in water is at  $15^{\circ}$  C., 1 in 2,024, and at  $100^{\circ}$  C., 1 in 760; in absolute alcohol, at  $15^{\circ}$  C., 1 in 1,133; in chloroform, at  $15^{\circ}$  C., 1 in 1,926; in pure sulphuric ether, at  $15^{\circ}$  C., 1 in 22,632.

(2). The solubility of tannate of quinia in water is below 1 in 20,000.

(3). The fluorescent power of quinia becomes twenty times more energetic under the influence of an excess of sulphuric acid.

(4). By means of this exalted fluorescence, it is possible to recognize the presence of the alkaloid in a solution containing quinia only in the proportion of one part in five hundred thousand; a degree rather beyond that stated by Flückiger who recommends this reaction. The author finds it to surpass in delicacy, in the ratio of 5 to 4, the opalescence caused by the double iodide of mercury and potassium, which, however, furnishes no clue as to the nature of the alkaloid of which it reveals the existence.

---

#### THE PRODUCTION OF ANILIN COLORS WITHOUT THE USE OF ARSENIC ACID.

It will be within the remembrance of readers of the "Chemical News" that Coupier, of Paris, was the first to succeed in producing fuchsin by the action, at a suitable temperature, of hydrochloric acid and iron in small quantities on pure anilin and nitrotoluol. Though Coupier's experiments were confirmed by Schützenberger, who showed the anilin-red obtained by Coupier's process to be identical with that usually manufactured, and found the yield somewhat greater than that obtained by the use of arsenic acid, the process was not applied industrially before 1872, when Meister Lucius and Brüning, of Hoechst, Germany, succeeded in working it on a large scale. This firm, however, appear to manufacture their colors only in part by this method, as they still supply the market with dyes containing arsenic.

More recently, the Gesellschaft für Anilin Fabrikation, of Berlin, have erected new works, where no arsenic acid is used in the preparation of colors. Not only fuchsin (rubin), but all the colors derived

\* "Loc. cit."

from it which are manufactured by this company, are warranted to be produced without the employment of arsenic, and to be entirely free from this poisonous reagent.

The Berlin Company are working Coupier's process with several important modifications, and produce from 200 to 300 kilogs. of fuchsin per diem. Some specimens of fuchsin and other colors manufactured by this company appear to be products of unrivalled beauty, purity and strength. The fuchsin is stated to be not only purer, but stronger than that made by the aid of arsenic acid, and is the pure hydrochlorate of rosanilin. The rosanilin base, from its great purity, is admirably adapted for the preparation of anilin blue, and is largely used by other manufacturers of anilin colors.

Being free from arsenic, these dyes are not only fitted for coloring sweetmeats, liqueurs, syrups, and pharmaceutical preparations of every description, but may be used in many other industrial purposes where poisonous colors would be more or less dangerous, as in the staining of paper, paper-hangings, toys, &c.

It is to be desired that other manufacturers of these dyes will adopt the new method, and relinquish the old arsenic acid process, which, apart from the inconveniences it has caused both manufacturers and consumers, has led to many lamentable accidents.—*Chem. News* [*Lond.*], Feb. 5, 1875.

#### ACTION OF LOBELINA ON THE CIRCULATION.

Dr. J. Ott, of Easton, Pa., has experimented with this alkaloid, which was prepared by Messrs. Hance Bros. & White, after the process of Professor Procter. The experiments were made upon rabbits, cats and dogs, the author arriving at the following conclusions:

"Reasoning from the above data, the inference would be that lobelina in small doses increases the blood pressure by acting as an excitant on the peripheral vaso-motor system. The pulse seems temporarily reduced and then increased; the necessarily limited number of our experiments precludes saying more about it. I will state here that I have found lobelia to be mainly a respiratory poison, and that in the cat it greatly reduces the temperature. The above experiments on lobelina were made in Professor Bowditch's Physiological Laboratory at Harvard Medical School; to him I am indebted for opportunities of study and many highly important suggestions in the investigation."—*Boston Med. and Surg. Jour.*, 1875, Feb. 4.

## VARIETIES.

OPIUM TRADE AT SMYRNA.—We clip from Circular No. 25 of the Philadelphia Drug Exchange, the following information of the amount of opium received at Smyrna and shipped from that port :

	1874.		1873.	1872.	1871.	1870.	1869.	
Receipts to Dec. 19,	1705	against	2172	2919	5356	2792	2798	baskets.
Stocks, new,	842	"	1123	1243	1216	975	741	"
" old,	412	"	640	431	75	—	—	"
" second-hand,	200	"	200	150	400	150	100	"
" inferior,	500*	"	725	975	1700	1125	950	"
" total,	1954	"	2688	2799	3391	2250	1791	"
Price,	230P		190P	210P	133P	205P	255P	

*Shipments of Opium from January 1 to December 31, 1874.*

To London,	.	.	.	.	.	.	505	cases.
To Liverpool,	.	.	.	.	.	.	221	"
To Rotterdam, <i>via</i> Liverpool,	.	.	.	.	.	.	331	"
To America,	"	.	.	.	.	.	902	"
To " "	.	.	.	.	.	.	702	"
To Rotterdam,	.	.	.	.	.	.	21	"
To Marseilles, &c.,	.	.	.	.	.	.	96	"
To Trieste, &c.,	.	.	.	.	.	.	48	"
To Singapore, Batavia, &c.,†	.	.	.	.	.	.	160	"
							2986	"

IODINE.—From recent advices regarding this article, we make some extracts, which may prove of interest.

At present, iodine is ruling at very low figures—very much lower, indeed, than it has for years past—but it is now firmly held, and an advance is not improbable, as prices are regarded as not being remunerative. In this connection it may be proper to observe that quotations for iodide of potassium also are quite low, even at the minimum rates named for crude iodine.

"Iodine—an article of so much importance in medicine and the arts—is produced chiefly in Scotland, where it is made from kelp. Sea-weed is collected on the west coast of Ireland and the western islands of Scotland. The sun-dried sea-weed is incinerated in shallow excavations, at a low temperature; for, if the temperature was allowed to rise too high, a considerable quantity of iodide of sodium would be lost by volatilization. The half-fused ash, or kelp, which remains, is broken into frag-

\* "Computing the crop at 2,750 baskets, which figure may easily be attained, if not exceeded, inasmuch as receipts between here and Constantinople are now nearly 2,300 baskets."

† 70 cases at 80 cheques (Dutch Co.

90 " at 40 "

ments and treated with boiling water, which dissolves about one-half the ash." "The liquid, thus obtained, is evaporated, and in cooling, the more crystallizable salts separate, namely, sulphate and carbonate of sodium, with some chloride of potassium. The mother-liquor still contains the iodide of sodium, sulphite of sodium, sulphide and carbonate of sodium."

"The liquor is then mixed with sulphuric acid, and allowed to stand for some hours. Carbonic and sulphurous acid and sulphuretted hydrogen gases escape, a fresh quantity of sulphate of sodium crystallizing out, mixed with a precipitate of sulphur."

"The supernatant acid-liquor is then transferred to the still, and then heated and binoxide of manganese added. The iodine sublimes into condensers, and may be purified by resublimation."

"The average produce of a ton of kelp is about ten (10) pounds of iodine. Besides iodine, kelp yields muriate and sulphate of potassium."

"Iodine is also made in Peru, from the mother-liquor of the 'caliche,' which contains, on an average, about one-third of one per cent. of iodate of sodium."

"Iodine is imported into England as iodine and iodide of copper. The present quotation is 8*d.* per ounce. Since July, 1874, the price has, in consequence of the accumulation of the Chilean make in England and on the continent of Europe, gradually declined from one shilling to the above quotation."

"The demand for the article not being sufficient to absorb the Chilean importations, as well as the undiminished production of Scotland, it is now thought that we are at a point where makers, either in Peru or in Scotland—or probably in both countries—will regulate their productions more in accordance with the wants of consumers. Indeed, there are already symptoms of such a policy being adopted by makers and importers, and therefore buyers have great confidence in the stability of prices, and are making contracts with greater freedom."

"Peru.—Regarding iodine, we beg to state that we have never heard of its being produced in Chili, but only in Peru, on this side. It is produced in the province of Tarapaca, out of the 'caliche.'

"In our 'officinas,' we produce it in the form of iodide of copper, which contains about 60 per cent. of pure iodine. This iodide of copper has been frequently sent to London, but it has met with very few buyers. Of late it has been sent to Germany, where it is sold in its original form as iodide, or after having been transformed into kalium iodatum or iodum resublimatum. . . .

"In some of our 'officinas,' in Tarapaca, it is produced in the form of pure iodine, and, so far as we know, sent, for sale, to England.

"When, formerly, the production of iodine was a monopoly in this country, it was separated in the form of moist, dirty paste; but now this has ceased.

"The form in which the iodine is extracted out of the 'caliche,' depends upon the opinions of the different chemists. Some consider that the form of cuprum iodidum is the most profitable one, and that the production of pure iodine is too expensive. The necessary arrangements for the manufacture of iodine are quite costly, and the machinery to be used requires a large sum of money, and therefore only in few 'officinas' in Tarapaca, this article, as such is produced.

"The manufacturers all consign their product to England, or elsewhere, so that there is no possibility to buy it here in this country.

"Regarding the contents of the iodine in the 'caliche,' we beg to say that some 'caliche' does not contain iodine at all; other contains more or less. According to our experience in this business, 1,000 quintals of 'caliche' yield about 25 lbs. iodine." (The quintal of Castille, Chili, Mexico, Peru = 101.61 lbs.)

As to the future price of iodine (and this, of course, will regulate the rates for iodide of potassium and other preparations) a great deal will depend upon circumstances, about which considerable uncertainty still exists; but from such facts as we have it would seem probable that extremely high figures (such as ruled in 1871 and 1872—25*d.* per ounce) are not likely to be demanded again.

Much depends—and this applies to every commodity—upon supply and demand. Now, as to the supply—it would appear that the South American manufacturers will be able to furnish it in considerable quantities. A correspondent states: "The quantity of iodine in Peru will be increased during the present year" (1874); and this added to the amount made in Europe will certainly furnish an abundant supply for every demand likely to occur, at least for medicinal purposes—hence *excessive* prices, based on limited production, can hardly be anticipated.

Iodine, however, is also employed in the arts—by color makers. The requirements of fashion are somewhat arbitrary and exacting, at times, and certain shades of color become extremely popular, so that immense quantities of material are required, occasionally at short notice, resulting in an enhancement of prices. Such has been the case in years past with corrosive sublimate, iodine and other chemicals, and, of course, a repetition is not impossible.

Again, the quality of the South American iodine must enter into consideration. We can readily appreciate the prejudice that must exist in the minds of those so long accustomed to use Scotch iodine, against any new material; but, as stated in our circular No. 22, "it has been acknowledged, we have been advised, in the London market to be equal to the Scotch," and, although *all* that has been sent from South America to London has not been equally pure, it has *generally* been 97 to 97½ per cent pure, and it can be bought by test. We do not see, therefore, why the price of the Scotch iodine (which we may take as the standard) should be higher than the South American, and, in fact, they now rate about the same.

It must be expected that the European manufacturers will not be disposed to relinquish the business so long as it pays a profit; and it may become a question who can make iodine the cheapest and control the market. We think it quite likely that iodine can be produced in South America at a comparatively low cost, being a by-product, extracted during the process of manufacturing nitrate of soda: but what the effect of a great fall in price would be upon the producers of Peruvian, we are unable to say, as we are unacquainted with the method by which they extract it.

Neither can we speak *definitely* as to the cost of the European, but in our circular No. 22 it is stated: "The production in France is certainly less now than last year, and two factories of importance are closed already, and others threaten to follow, as they pretend they work under a loss, particularly by the enormous depreciation of muriate and sulphate of potash." It is generally supposed that the present rates are not very remunerative to the Scotch and French makers.

If the Peruvians can produce iodine to the extent indicated by advices received from South America, and can make it so much more cheaply as to afford to send it



to Europe and undersell their competitors, and still be content with the profits, the entire business may eventually be absorbed by them. Under such circumstances a combination would be improbable.

If, on the other hand, the cost to manufacture shall be found to be about equal, a combination for mutual protection might be formed and prices be advanced.

The question has received serious consideration in Europe as to combination or competition between the foreign and home producers. So far a conservative policy seems to have been observed by the agents of the Peruvians, in London and elsewhere, and an indisposition manifested, on their part, to unnecessarily depress prices. Should they offer their consignments on arrival, without reserve, the result would be that, in a short time, they would discover—

First. Whether a much lower price would stimulate consumption.

Secondly. Whether such concession in price would affect production either in Scotland or South America, or in both.

From such information as we have, therefore, a combination to materially advance prices seems quite improbable, but it is possible that about present rates may be steadily maintained.—*Philadelphia Drug Exchange Circular No. 25.*

---

THE PREVENTION OF SEA-SICKNESS.—Dr. Giraldès has published, in the last number of the "*Journal de Thérapeutique*," an account of the means by which he avoided sea-sickness during two passages to England and back. He was at Boulogne last June *en route* for London, when the weather was so rough that many intending passengers hesitated to cross the channel. Dr. Giraldès was informed by a colleague at Boulogne that American physicians used the syrup of chloral as a preventive of sea-sickness with successful results. He therefore obtained some syrup of chloral, put him-self into a quiet corner, and took his syrup directly the vessel was in motion, when, although his fellow-passengers experienced the usual unpleasant consequences, he arrived at Folkestone without having suffered the least inconvenience. The same results were obtained on the return voyage; but he increased the amount of chloral. He had again occasion to cross the channel at the end of September, by the night boat from Calais to Dover, and thinking, with reason, that the sea would be rougher at that season than usual, he had a draught made up composed of chloral, 3 grams (45 grains); distilled water, 50 grams; gooseberry syrup, 60 grams; and French essence of peppermint, 2 drops. He took half of the draught as the vessel left the harbor, and arrived at Dover without having suffered in the least from sea-sickness, whilst his companions were in the usual condition of prostrate misery. A very heavy sea was running. On his return from London on October 30, there was a high sea and much wind; he accordingly took the remaining portion of his draught, soon went to sleep, and only awoke on his arrival at Calais in the best possible condition. Dr. Giraldès remarks that he is, as a rule, affected by sea-sickness when he crosses the channel, and that his two trials of chloral have convinced him of its efficacy as a preventive of that most disagreeable malady. He adds that he never goes down into the cabin, but makes himself as comfortable as circumstances will allow on deck.—*Medical News*, Feb., 1875, from *Lond. Med. Record*, Dec. 9, 1874.

---

DETERMINATION OF TANNIN.—MM. Muntz and Ramspacher.—The principle of the method is as follows:—A solution of tannin, filtered by pression or aspira-

tion through a piece of hide, gives up to it all its tannin, whilst the rest of the dissolved matters pass through the animal tissue. The authors have satisfied themselves by direct experiment that the matters which may accompany the tannin, such as saccharine and gummy substances, organic salts of potash, lime, magnesia, &c., are not retained by the hide. On evaporating to dryness equal quantities of the solution, filtered and unfiltered, and deducting the weight of the former residue from that of the latter, we find the exact weight of the tannin absorbed by the hide. As an example, 50 grms. of oak-bark, ground in a coffee mill, are exhausted with boiling water, so as to make up 250 c. c. of liquid. A piece of hide, free from hair, and previously softened in water, is stretched over a small zinc drum of about 0.06 metre in diameter, and secured in its place with a copper wire. The opposite end of the drum forms a tube, to which is attached a tube of caoutchouc from 1.5 to 2 m. in length, and terminating above in a funnel. Into this is poured the solution of the sample. The first 4 or 5 c. c. of the filtrate are rejected because they contain certain albumenoid matters expelled from the hide by displacement. After having thus collected by filtration a certain quantity of liquid, 25 c. c. of the filtrate are evaporated to dryness at 100°, and also 25 c. c. of the unfiltered solution; we have then—

Weight of tannin and foreign matter,	0.465 grm.
Weight of foreign matter alone,	0.175 "
	<hr/>
	0.290

being the weight of tannin present in 25 c. c. of liquor. The total volume of this liquor being known, and the amount of bark from which it is obtained, the percentage of tannin in the latter is found by a very simple calculation.—*Chem News* [Lon.], Dec. 24, 1874, from *Bull. de la Soc. Chim. de Paris*, Nos. 6 and 7, Oct. 5, 1874.

## MINUTES OF THE PHARMACEUTICAL MEETING.

The fifth meeting of the session was held February the 16th, 1875, the President, Dillwyn Parrish, in the chair. The Minutes of the previous meeting were read and approved.

The following presentations were made to the Cabinet and Library, and the thanks of the College awarded to the donors:

From A. W. Miller, M. D., a handsome specimen of white grape sugar; also, swimming bladders of weak fish or ocean-trout, *Otolithus regalis*; from Wilson H. Pile, M. D., two hydrometers made without the usual bulb, this shape permitting them to be introduced into bottles, etc.; from Prof. Remington, Armstrong's Graduated Plaster Apparatus—a convenient instrument for measuring correctly the size of plasters and preserving a straight edge—consisting of a board with two graduated squares, having bevelled edges, controlled by side pieces and set screws; from the American Pharmaceutical Association, a copy of their Proceedings, vol. xxii, 1874; from H. N. Rittenhouse, the Ninth U. S. Census Report in four volumes.

W. H. Walling exhibited a specimen of an impure carbolic acid, which was recently offered as creasote, and spoke of the difficulty of obtaining genuine wood-tar creasote. Prof. Remington remarked that dealers were in the habit of furnishing coal-tar creasote, unless wood tar creasote was specified, when it was supplied. Prof. Maisch called attention to the variable composition of creasote, as furnished by different makers, and exhibited six specimens, all of which were free from carbolic acid, yet differed more or less in smell and reaction.

A. P. Brown had used spiritus ætheris nitrosi as a test. Prof. Maisch believed that the reactions and properties of creasote, made in different countries and by different manufacturers, would continue to vary more or less, until creasote ceased to be a mixture of several products of the dry distillation of wood, and its correct chemical composition had been ascertained; at present, perhaps, the most reliable test is its miscibility with collodion without coagulating it.

A. W. Miller, M. D., exhibited two samples of oil of sandal wood—one pure, the other adulterated—and a fine specimen of German oil of juniper berries.

Prof. Remington exhibited four specimens of the seeds of *Theobroma cacao*, illustrating the most important commercial varieties. Maracaibo is sold at the highest price, and is considered the best.

Wm. McIntyre had procured some of the oil of Ceylon cinnamon, presented by Dr. Miller, at the last meeting, and with it prepared cinnamon water, which was found to possess the sweet taste which he had presumed was characteristic of cinnamon water prepared by distillation.

Dr. Miller read a paper entitled, "Notes on Pronunciation and Orthography" (see p. 102), which called forth many remarks urging more attention to the correct rendering of many words in common use.

R. V. Mattison read a paper "On Suppositories" (see p. 98), advocating the making of these preparations in moulds; the mould of Mr. Sloan, and samples made by the process described, were shown. Prof. Maisch read a note of James Kemble on the same subject, but advocating the hand method (see p. 101).

Dr. Miller exhibited a glass syringe for moulding and introducing suppositories. A somewhat similar contrivance was introduced upon a previous occasion by Alfred B. Taylor, and by him named *suppositer* (see "Amer. Jour. Pharm.," 1861, p. 202).

A paper by H. M. Wilder "On Mixtura Glycyrrhizæ Composita and Purified Extract of Licorice" was read (see p. 97), advocating the use of the latter in preparing the former. Regarding the use of the words *officinal* and *official*, it was stated that Prof. Atfield had advocated, some years ago, the views expressed by Mr. Wilder, and that the two words were now thus used in Great Britain; but that in other countries the word *officinal* appeared to be used, like in the United States, to express both meanings. It was suggested that Dr. Miller might find it convenient to examine into this matter.

Prof. Remington read a letter from Emlen Painter, transmitting the first thesis presented to the California College of Pharmacy, on volatile oil of "*Oreodaphne Californica*, California Bay Laurel, by John P. Heaney." An abstract of this thesis is published on page 105. A flowering branch of the tree accompanied the documents.

Dr. Miller read a paper, entitled "Deer Tongue in Perfumery" (see p. 116), giving formulas for various preparations containing *Liatris odoratissima*, and exhibited samples of the same.

Prof. Maisch read a paper "On the Constituents and Properties of the Genus *Potentilla*" (see p. 109), and exhibited herbarium specimens of the described species.

These papers were all referred to the Publication Committee.

W. H. Walling urged upon members the propriety of curtailing Sunday traffic. He had consulted in regard to the proper place to introduce this subject to the notice of the College, and asked that all should do something. Dr Pike believed that no rule could be adopted; but, as it was an individual matter, each one must depend upon himself. He found no difficulty in closing, and was aware that many were in the habit of furnishing required medicines only on Sunday.

Dr. Miller presented a sophistication of spigelia, to which his attention was drawn by S. W. Brown, of Manayunk. Upon inquiry he learned it was known in the market as East Tennessee pink-root; but the plant from which it is derived has not been ascertained. It is said to be largely sold to manufacturers of fluid extracts. Wm. McIntyre related his experience in obtaining powders of the proper fineness for percolation, recourse to the mortar and pestle frequently being necessary with articles like ergot. Prof. Maisch suggested to take advantage of the cold weather to powder ergot and other articles of a similar oily nature; and Mr. Mattison stated that he had obtained good results thereby.

Yellow glassware is being introduced by Maris & Co., of this city. A tincture bottle made with this glass, which is colored by uranium, was exhibited. Prof. Maisch said that it would be interesting to have its value ascertained, by experiment, as a protector of substances prone to change by the action of light. The Danish Pharmacopœia directs the following preparations to be preserved in *either yellow or black glass vessels*: mercurous and mercuric iodide, white precipitate, calomel and chlorine water.

On motion adjourned.

WILLIAM MCINTYRE, Registrar.

---

## PHARMACEUTICAL COLLEGES AND ASSOCIATIONS.

---

THE NEW JERSEY PHARMACEUTICAL ASSOCIATION held its fifth annual meeting in Camden, at Morgan's Hall, on Wednesday, February 10th, 1875. The meeting was called to order by the President, James R. Mercein. After the business for which the Association was convened had been transacted, and the address of the retiring President had been delivered, an election for officers for the ensuing year was held, with the following result:

For President, J. L. De la Cour, of Camden; Vice-Presidents, C. C. Wells, of New Brunswick; R. W. Gardner, Jersey City; Treasurer, William Rust, New Brunswick; Recording Secretary, P. W. Levering, Jersey City; Corresponding Secretary, C. B. Smith, Newark. Standing Committee, Julius Fehr, Hoboken; S. T. Ringel, Camden; James Stratton, Bordentown; C. H. Dalrymple, Morristown; C. C. Wells, New Brunswick.

The afternoon session was occupied in reading of essays and answers to queries, after which the Association adjourned, to meet during the summer at Long Branch.

In the evening a banquet was given to the members of the New Jersey Pharmaceutical Association by the Camden Association, at Rudolph's Palace of Luxury, where Mayor Jones and several members and guests addressed the company. Later in the evening an informal reception of the Association was given at Morgan's Hall, where most of the prominent citizens of Camden assembled to witness the display of drugs, chemicals, apparatus and pharmaceutical preparations. Music was discoursed by the Sixth Regiment Band, and, after a promenade concert, dancing was indulged in by those so inclined, and at a late hour the assemblage departed, well pleased with the results of this meeting, and with the exhibition, to which a number of the members and several of the most prominent firms of Philadelphia and New York had freely contributed.

---

CINCINNATI COLLEGE OF PHARMACY.—At the monthly meeting of the College, held Tuesday, February 9th, Professor E. S. Wayne exhibited and presented to the College a splendid mass of crystals of caffeine, and made some remarks upon a new method for its manufacture from tea or coffee; which is, to boil the powdered tea or coffee with one and a half times its weight of finely-powdered litharge in water. A bright and almost colorless solution is thus obtained, which contains a little lead. This is removed by passing sulphhydric acid gas through the solution, and filtering off the sulphide of lead. On evaporation to the crystallizing point and cooling, the caffeine crystallizes out in colorless crystals. The mother liquid will be found slightly yellow; treated with animal charcoal, upon evaporating, it yields another crop of crystals. The process was said to be a cheap and rapid one for preparing caffeine, and to yield largely.

He also exhibited a very rich and rare gold ore from near Boulder, Col. (from the Grand View mine), called sylvanite (a telluride of gold and silver), and the results of its assay, consisting of tellurium beautifully crystallized on the surface, and the gold and silver; some specimens assaying as high as \$29,000 to the ton.

He also presented to the College some fine specimens of English rhubarb root, round and flat, and a specimen of the cardamom, described by Pereira as the hairy, round, Chinese cardamom. They are about half an inch in diameter, almost spherical, have much less aromatic taste and smell than the officinal sort; and, as presented, were deprived of their capsules, and had evidently been limed.

---

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—At the pharmaceutical meeting held February 3d, the President, Mr. F. H. Hills, in the chair, Mr. Greenish presented a number of treatises describing the results of various original investigations carried on in the laboratory of the Pharmaceutical Institute at Dorpat, under the supervision of Prof. Dragendorff, such investigations being undertaken during the second year of attendance, and the results being embodied in theses presented upon the application of the students for the degree of "Magister" of Pharmacy. He would be glad to see the highest honors of the Pharmaceutical Society of Great Britain become the reward of original research rather than the result of an examination, and he hoped that at some future time there would exist a College of Pharmacy in Great Britain which would grant degrees as the reward of original research.



Mr. Francis Sutton read a paper on the construction of an international Pharmacopœia, describing the work performed by a commission of thirteen, appointed by the Paris Pharmaceutical Society, the results of whose labors were presented to the International Pharmaceutical Congress, at St. Petersburg, in a work, consisting of 534 pages of manuscript, post quarto, many of which not half filled. The commission have evidently largely consulted the various Pharmacopœias of Europe and the United States. The general outline and features of the work are similar to those of the Paris Codex. It is divided into three parts, Part I, *Preliminary Matters*, containing tables of weights, measures, specific gravities, temperatures, alcoholic strengths, &c.; Part II, *Materia Medica*, giving the pharmacognostic history and description of natural products, and Part III, *The Pharmacopœia*, comprising the chemical and pharmaceutical preparations arranged—in this provisional copy—in the alphabetical order of their French names. In the choice and compilation of the formulas, numbering between 300 and 400, preference was given to those which are most simple, rational and frequently used, without distinction of origin.

The discussion following the reading of this paper was of great interest; a few members appeared to be in favor of such a Pharmacopœia superseding the national Pharmacopœias, and acknowledged the many difficulties to overcome which would probably require a number of years. Most speakers, however, expressed themselves opposed to such a view, their sentiments being, perhaps, most concisely expressed by Professor Redwood, who said that "he could conceive that some benefits would result from a work which bore the character of an International Pharmacopœia, if it were possible to have a work which would describe the principal and most active medicines which were used in every country, and if at the same time it were possible to induce the medical and pharmaceutical authorities in those countries to adopt one uniform standard with reference to every medicine which bore a specific name." Professor Attfeld pointed out that, before any very close approximation could be made, there must be an interregnum, during which a compilation of the formulas adopted by the various Pharmacopœias would be necessary and desirable as a work of reference.

The selection of the articles, as made by the Paris Commission, was likewise criticised. It was urged that definite chemical compounds were needless in such a book, and attention was drawn to the large number of ointments (33) and plasters (20) contained in the submitted draft, and to the omission of ammonio-citrate of iron, tartrate of iron, and similar preparations.

Regarding the language in which such a work should be published, some speakers advocated Latin as the only one which would be understood throughout Europe, while others favored the use for each nation of their own vernacular.

Mr. E. M. Holmes read a "Note on a Spurious Senna," which will be published in our next number. This spurious senna does not act as a cathartic. It is important to state now, that in color and size it somewhat resembles the Tinnevely variety, and that not less than two hundred tons have been shipped to London. Mr. Hanbury was unable to find any mention of its being used for any purpose in any part of the world.

Mr. Moss called attention to a specimen of absolutely pure carbolic acid, in the form of a coarse crystalline powder, which did not become damp on being kept in paper for two or three weeks. He thought it highly probable that the claims which



had recently been made for using salicylic acid as an antiseptic dressing (*see* "Amer. Journ. Pharm.," 1875, p. 66), might be set aside in favor of this pulverulent and faintly-fragrant phenol.

Several samples of artificial salicylic acid were exhibited, as also artificial oil of gaultheria, prepared by Mr. John Williams, who stated in a "Note on Salicylate of Methyl," that it is easily produced by mixing salicylic acid, pure wood spirit (methyl alcohol) and sulphuric acid together in a retort, and distilling in an oil bath, the temperature required being about 208° C.

---

## EDITORIAL DEPARTMENT.

---

COVERS FOR THE JOURNAL.—The Publishing Committee has procured covers in which the numbers of the Journal may be fastened for preservation, and to prevent their being lost or soiled during the year. Each cover is large enough to hold one volume, which, when complete, may either be taken out to have it bound in any desired style, or the cover itself may be used for the permanent binding of one volume. Two styles have been prepared, one being half cloth, with marbled paper sides, at 50 cents each; the other being full cloth, embossed, and with "American Journal of Pharmacy" in gilt letters on side, at 75 cents each. The covers will be mailed by the Business Editor to any address, on receipt of the money.

---

THE STAMP-TAX ON MEDICINES.—In a footnote to an editorial in our last issue (p. 92), we have informed our readers that the so-called "Little Tariff Bill" had passed both Houses of Congress. The law is entitled "An Act to Amend the Existing Customs and Internal Revenue Laws, and for other Purposes," and received the official sanction of the President, February 8th. The twenty-second section has been adopted in the form reported by us on page 351 of our last volume; it has been framed in clear language, and will, it is hoped, do away with the numerous vexations to which pharmacists have formerly been subjected. It is well to call attention to it here, that medicines put up for sale, in order to be relieved from the stamp-tax, must be actually *prepared* according to certain formulas, which must either be *printed in full* upon the label, or else the label must *state where* (in which standard Dispensatory or Pharmacopœia in common use, or in which pharmaceutical journal of an incorporated college of pharmacy) such formula is to be found; moreover, *no proprietorship* must be claimed for the preparation. In accordance with this we would regard labels reading "A B's Solution of Citrate of Magnesium," or "Solution of Citrate of Magnesium prepared only by A B" as making the article liable to be stamped; while no stamp is required if the label reads: "Solution of Citrate of Magnesium, U. S. Pharmacopœia, 1870, p. 217; prepared by A B," and is actually prepared by that formula.

For the benefit of our new subscribers we reprint here the section in full:

"SECTION 22. That hereafter nothing contained in the Internal Revenue Laws shall be construed so as to authorize the imposition of any stamp-tax upon any medicinal

articles prepared by any manufacturing chemist, pharmacist or druggist, in accordance with a formula published in any standard Dispensatory or Pharmacopœia in common use by physicians and apothecaries, or in any pharmaceutical journal issued by any incorporated college of pharmacy, when such formula and where found shall be distinctly referred to on the printed label attached to such article, and no proprietary interest therein is claimed. Neither shall any stamp be required when the formula of any medicinal preparation shall be printed on the label attached to such article, where no proprietorship in such preparation shall be claimed."

PROSECUTIONS FOR ALLEGED ADULTERATIONS.—Since the Adulteration of Food Act has become a law in England, quite a number of prosecutions have taken place under it, wilful adulterations having been shown in some cases, while in some the public analysts could not agree as to whether a substance found had been added for the purpose of increasing the weight. Recently, however, proceedings were instituted in two cases, which appear to be so curious in some of their features that we cannot refrain from laying them before our readers.

At the Wolverhampton Borough Court, Thomas Smith, soda-water manufacturer, was charged with having sold adulterated soda-water. The borough analyst, E. W. T. Jones, after examining it gave the following certificate: "The title under which this sample was sold is quite a misnomer; it is an *anomalous specimen* altogether, containing no carbonate of soda, and hence devoid of the valuable properties peculiar to genuine soda-water. Carbonate of lime is present in considerable quantity, and it shows traces of copper. I consider it is an adulterated article, and injurious to health." We have italicized the portions which appear to us the most curious, and upon the strength of which any American manufacturer of soda-water would be liable to a penalty under British laws, particularly if hard water had been used in its manufacture, as was shown to be the case on this occasion. The defendant was fined 40s. and costs; it is not stated whether the fine was imposed on account of the undetermined traces of copper, the likewise undetermined considerable quantity of carbonate of calcium, or the total absence of carbonate of sodium.

A case of still greater interest and importance was the charge against John Halliwell of having sold adulterated milk of sulphur, tried at the Leeds Borough Police Court February 3d. Our readers will perhaps remember the paper by Prof. Attfield, on adulterated precipitated sulphur, published in this Journal in 1869, page 249, and the interesting discussion which followed its reading before the Pharmaceutical Society of Great Britain, and in which it was proven, that under the name of *milk of sulphur*, the old form of sulphur precipitated by sulphuric acid, and consequently containing much sulphate of calcium, was sold in England, while the official article, which is precipitated by hydrochloric acid, and is therefore free from calcium salts, is sold by its official English name—*precipitated sulphur*. This was again particularly brought to the notice of American pharmacists by Mr. H. T. Brady, formerly President of the British Pharmaceutical Conference, when he was present at the nineteenth meeting of the American Pharmaceutical Association, at St. Louis, in 1871 (see Proceedings, 1871, p. 60).

In the case referred to, the admixture of sulphate of calcium was admitted, and no witnesses were called by the defence, which rested its merits entirely upon the

statements and admissions of the borough analyst, Thomas Fairley, who fairly withered under the searching cross-examination, ably conducted by Mr. Simpson, counsel for the defendant; and while admitting on the one hand that two distinct substances were sold under two distinct trade names, would insist that they ought to be chemically alike. The prosecution was abandoned and the summons withdrawn.

We felt obliged to call attention to these cases, in order to show to what annoyances persons may be subjected who endeavor faithfully to comply with the spirit of the law. Pharmacists and druggists in this country have had considerable experience in such matters under the changing and variable rulings under the provisions of our Internal Revenue Laws; and while we rejoice that the latter have now been verbally altered, so as to express unmistakably the meaning originally intended for one particular provision, we may be permitted to express the hope, that if ever an adulteration of food act should be passed here, we may have profited from the experience of other countries, so that its provisions may be clear, and not liable to be used as means for annoyance under erroneous preconceived opinions on the part of prosecutors.

---

## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

---

*Compendium of Children's Diseases. A Hand-Book for Practitioners and Students.* By Dr. Johann Steiner, Professor of the Diseases of Children in the University of Prague, etc. Translated from the second German edition by Lawson Tait, F. R. C. S., Surgeon to the Birmingham Hospital for Women, etc. New York: D. Appleton & Co. 1875. 8vo, pp. 408.

The first edition of this work was so well received in Austria and Germany that after a very short period a second edition had to be prepared, which is now presented to the English speaking profession. An excellent work might have been expected from the position of its author, during a period of fifteen years in the Francis-Joseph Hospital for Children in Prague, and the manner in which it has been received, speaks for its value.

The work is divided into the following nine divisions: the investigation of disease; diseases of the nervous system; diseases of the organs of respiration; diseases of the organs of circulation and of the lymphatic system; diseases of the organs of digestion; diseases of the urinary and sexual organs; general diseases of nutrition; zymotic diseases and diseases of the skin. A very acceptable appendix contains the rules for the management of infants, issued by the staff of the Birmingham Hospital for Sick Children.

---

*On Diseases of the Hip-joint.* By Lewis A. Sayre, M. D., Professor of Orthopedic Surgery and Clinical Surgery in Bellevue Hospital Medical College. New York: G. P. Putnam's Sons. 1874. 8vo, pp. 24.

This is the first number of "A Series of American Clinical Lectures," edited by E. C. Seguin, M. D. It is intended to select lectures upon topics of practical interest, and only by recognized medical instructors of the United States. At present

one lecture will be published every month, at a price not exceeding fifty cents each; but if sufficient encouragement be received it is proposed to make the issue semi-monthly. Some of the first teachers in New York have already promised their assistance, and there seems to be no reason why such an enterprise should not meet with the hearty support of the intelligent medical practitioners. The number before us is gotten up in a very creditable style.

---

*A Statement of the Theory of Education in the United States of America, as Approved by many Leading Educators.* Washington: Government Printing Office. 1874. 8vo, pp. 22.

Since there is no national system of education under control of the general Government, it became of importance to study the systems adopted by the different States, and to deduce therefrom a national theory of education. This task has been well accomplished by Hon. Duane Doty, Superintendent of City Schools, Detroit; in conjunction with Hon. W. T. Harris, holding the same position in St. Louis. There is scarcely a sentence with which fault would be found on critical analysis, although some portions might have been more minutely elaborated: as, for instance, the *system of instruction*, which we consider entirely too brief.

---

*The National Bureau of Education: its History, Work and Limitation.* Prepared under the direction of the Commissioner of Education, by Alexander Shiras, D. D. Washington: Government Printing Office. 1875. 8vo, pp. 16.

We have repeatedly had occasion to refer to publications of this bureau, and we now take occasion to recommend this one to the careful consideration of our intelligent readers. While much has been accomplished with us in the matter of education, more remains to be done; and with the comparatively very limited influence, such a bureau can exert under existing circumstances, it is the more praiseworthy to notice its persistent efforts towards not merely the collection of statistics, but likewise the improvement in the education of the masses.

---

*A Retrospect of the Struggles and Triumph of Ovariectomy in Philadelphia, With some Remarks on Allied Subjects.* By Washington L. Atlee, M. D.

This is the Annual Address delivered by the retiring President before the Philadelphia County Medical Society, February 1, 1875, and is published by order of the Society. It gives a history of this operation, with which the author's name is prominently connected.

---

*Near Sight, Treated by Atropia, with Tables.* By Hasket Derby, M. D., Surgeon to the Massachusetts Charitable Eye and Ear Infirmary at Boston, etc. New York. 1875.

The reception of this essay is hereby acknowledged; also of the following publication:

---

*The Illustrated Annual of Phrenology and Physiognomy.* New York. 1875.

## OBITUARIES.

### MEMOIR OF CHARLES ELLIS.

(Read at the Quarterly Meeting December 28th, 1874.)

CHARLES ELLIS was born at Muncy, Lycoming county, Pennsylvania, First month 31st, 1800. His father, William Ellis, had emigrated from Wales, and formed one of the noble band of men who had given up the comforts of civilization, the ties of kinship and friendship in their own country, to endure privation, toil and hardship in the forests of ours, for the sake of preserving a conscience void of offence against God. He belonged to the Society of Friends, and his wife, Mercy Ellis, was one of the most widely-known and highly-esteemed preachers among them.

William Ellis possessed himself of large tracts of land in Lycoming county when but sparsely settled, and, by well-directed industry and the exercise of the manly qualities which were characteristic of the Welsh Friends, had the satisfaction of seeing the wilderness gradually disappear to make way for the thrifty farm-house and village; and the flourishing condition of this portion of the State is directly traceable to the influence of such worthy pioneers.

Charles was the fifth son in the family, which consisted of eleven children, and his father's death occurring when he was but six years of age, left the responsibility of rearing this household with his mother, who proved well fitted for the labor of training them in the paths of rectitude and wisdom.

His love for truth, his watchful care to avoid injuring any of his fellows, either by word or act, and the gentleness which so characterized and ennobled the man in his mature life, no doubt received its first impulse as he listened to the teachings and profited by the example of this faithful parent. Foreseeing the necessity of a better education for them than could be afforded in the common schools of this thinly-settled neighborhood, she employed a competent teacher to instruct them. Thus, from his sixth to his fifteenth year, he was carefully taught at home, and when he arrived at the latter age, he was prepared to enter a school at Manhattanville, New York, where he received an excellent education, which still further fitted him for the duties of the active life which was to follow. On leaving school in 1817, he came to Philadelphia, and choosing the profession of pharmacy as affording the best outlet for the exercise of the tastes with which he had been endowed, he had the good fortune to obtain a position as an apprentice in the shop of Elizabeth Marshall, to learn the "art and mystery of the apothecary." This establishment was on Chestnut street between Second and Third streets, and was in the full tide of prosperity under the skillful management of the talented daughter of Charles Marshall (the first President of the Philadelphia College of Pharmacy). The store had earned an enviable reputation through the exertions of its founder, Christopher Marshall, who carried on the business, during the time of the Revolution, with credit and success, and on his son Charles attaining his majority, he was admitted into partnership with his father and elder brother, and subsequently, on their retirement, succeeded to the proprietorship. Charles Marshall was well qualified to conduct the apothecary business as it was carried on at this time, for it was necessary then



to be both botanist and chemist, not only to make tinctures from drugs which had already been gathered in store, but to go out into the woods, collect the plants, dry and powder them, and then make the preparations; for there were no laboratories for supplying finished products to pharmacists, as there are now. He largely increased the reputation of the store, and, on his retirement, his daughter, before mentioned, succeeded him.

It was into this shop, with its dignified maiden pharmacist at the head, that Charles Ellis started on his career, and in the course of his apprenticeship he had a number of companions, among whom were Frederick Brown, Sr., Samuel P. Griffiths (son of Dr. Griffiths), Isaac P. Morris, Caspar Morris, Joseph Morris, etc., names that have since become well-known in their various professions.

It was not long before Charles, by dint of industry, perseverance and the exercise of those qualities which make the pharmacist honored, respected and successful, was called upon, in connection with Frederick Brown, to assume the management of the establishment. In the year 1826, he associated himself with Isaac P. Morris, and purchased the business, thus becoming part owner of the store in which he had passed so many years. The firm of Ellis & Morris, although highly prosperous, gradually emerging from a retail to a wholesale business, was not destined to remain in business very long. About 1830, Isaac P. Morris withdrew from the partnership, and subsequently founded the extensive and well-known Port Richmond Iron Works, leaving CHARLES ELLIS the sole manager of the business, which still continued to steadily grow. The increased amount of responsibility which the remaining partner was called upon to assume caused a rapid development in his character. A friend, who knew him intimately, thus speaks of him:

"It is impossible to place too high an estimate on the influence exerted by him, not only on his own profession, but the community at large. Who, but the physician himself, can appreciate the anxiety with which he investigates the nature of disease and prescribes the appropriate remedy? With prudent caution the symbols of the required dose, and the directions for the appropriate combination, are placed upon paper; but the effect depends on the quality of articles employed; the care with which the quantities are measured or weighed, and the skill with which they are compounded. The character of CHARLES ELLIS, in every one of these points, stood unquestioned, and the medical adviser went on his way to assume other responsibilities, free from the distracting and depressing influence of dread, when the prescription was entrusted to his care for preparation; and his spirit of confiding trust was extended to those educated by him, so that to know that the materials used in compounding were purchased from CHARLES ELLIS was ever accepted as a guarantee for their purity. This was no trifling honor, no humble achievement, and it was acquired not by boastful pretention, nor by advertising arts, but by the simple, quiet and, above all, honest attention to the duties of his position. His entire life, in all its relations and outgrowth, was the simple development of this one principle, and hence it became, as nearly as fallen nature may do, a perfect life, so far as it was subject to finite observation and judged by human standard."

In 1821, the Philadelphia College of Pharmacy was founded, and from that date did CHARLES ELLIS not only take great interest, but actively labored for its advancement. During the first few years of its existence, when it was scarcely more than a name, he was always found at his post, ready to do his part. Though one of the sixty-eight original members of the College, at his death he left but three of the



sixty-eight members still living; and it will be seen, by a consultation of the minutes of the College, that he was an active member for over half a century, over forty years of which was spent in an official capacity.

In 1828 he was elected Recording Secretary, and he served acceptably in this office for fourteen years; at the end of this time (1842) he was chosen First Vice-President, which position he held for nearly twelve years (until 1854), when he was tendered the highest office in the gift of the College—that of President—and he continued to discharge his duties in this connection for fifteen years.

The files of the "American Journal of Pharmacy" reveal a number of contributions from his pen, and he served for forty years as one of the members of the Publishing Committee, the greater part of the time holding the position of Treasurer.

This office was one that was beset with difficulties. During this long period of forty years his services were rendered gratuitously, and the labor involved of keeping the accounts, distributing the "Journal," making collections, &c., &c., was of no light character. "An instance of long, disinterested service rarely met with in the annals of journalism."

As President of the College it was his duty to confer the degree of Graduate in Pharmacy at the Annual Commencements, and the fulfillment of this duty was characterized by his usual dignity and modesty. In an address delivered on one of these occasions he uses the following language, which is just as appropriate in this day, when pharmacy has received a recognition as a separate profession, as it was then:

"The improved condition of pharmacy in the present day, the elevated position it has assumed in Europe and is beginning to hold in this country, is entirely owing to its being taught and cherished as a separate science; whilst in those places where the extemporaneous combination of remedies has been retained by the physician, pharmacy has risen no higher than a mere art. Its proper cultivation and pursuit are entirely incompatible with the arduous duties of medical men, who, aware of the advantage that would arise to society from this diversion of labor, have in this city set a generous example by relinquishing it and all its emoluments into our hands. We have accepted the responsible trust; and an earnest devotion to the science—a determination to procure and vend everything of the best quality, to permit no consideration of expense or trouble ever to induce a momentary inattention to the purity and activity of our drugs, a uniform system of order and cleanliness, and constant personal attention to and supervision of every duty devolving upon us, and an anxious desire to respect and not to interfere with the rights and privileges of the physician—will be the surest evidences we can offer that the confidence has not been misplaced. Unreserved and explicit as that confidence is which is reposed in us by others, are we not called upon in the most emphatic language to be prepared fully for the task we have undertaken? If we are not, if we have not sought knowledge from every opportunity, and drained it from every source, we are playing a part of the deepest hazard, and tampering with our own reputations, if not with the health and lives of our fellow-beings.

"We have much in our power. The discoveries of modern times in medical chemistry have generally been the result of the laborious investigations of European apothecaries. They enrol in their number men of profound learning, extensive acquirements in every branch of natural science, in a word, they are ornaments to their country and to the age in which they live.

"May we not imitate their example, and by endeavoring to extend the boundaries

of human knowledge, elevate our business to the rank of a liberal profession, which it must hold, if not fully attained by the exertions of those who are now contending for pre-eminence, it will be by others who succeed us."

These words, spoken forty years ago, when pharmacy, as a separate science, was almost in its infancy, reflect the mind of the author. We see here how his earnest spirit longed for a higher grade of qualification in those who oftentimes hold the balance which is to decide a case of life or death.

He lived to see his aspirations partially realized. That he had been aptly chosen for the position which he occupied as President of the College, is well shown by his careful attention to its duties, as well as by the almost parental interest which he manifested in the welfare, not only of those who were employed under his own roof, but in every young man upon whom he conferred the degree of Graduate of Pharmacy, who sought his aid.

Whilst his interests in our College were of the most active and useful character, he still contributed a large portion of his time to pursuits which tended to alleviate the sufferings of the diseased and helpless, in elevating the oppressed, in educating the ignorant, and in many ways he proved his faith by following the One Master whom he delighted to serve.

In early life he was often solicited, by his fellow-citizens and neighbors, to take part in the affairs of civic government; but a sensitive nature like his shrank from political associations, and found more congenial employment in works of benevolence and charity. He was for many years a manager of the "Friends' Asylum" for Persons Deprived of their Reason; the Society for the Support and Establishment of Charity Schools, founded long before our free schools were known; the Philadelphia Society for Alleviating the Misery of Public Prisons; the House of Refuge for Juvenile Delinquents; Wills' Hospital for Diseases of Eyes and Limbs; the Orthopædic Hospital for the Cure of Deformities and Nervous Diseases; the Philadelphia Dispensary; the Tract Association and Bible Society of the Society of Friends were among the institutions that claimed his active sympathy and support.

CHARLES ELLIS was a consistent member of the Society of Friends; early in life he took a warm interest in the affairs of this religious body, and his voice was frequently raised in support of active evangelical works.

And now, as we close this brief tribute to a departed friend, who seemed to some of us more like a kind father, we can but pause. The years are gliding swiftly by. A few more days will close this one, the most eventful one in our history for a long period. Death has been busy. Two who, this day one year ago, grasped hands with us and exchanged evidences of mutual kind feeling and regard, are missed at this, the closing meeting of the year. Almost in the twinkling of an eye they were both called home.

The retrospect of CHARLES ELLIS' life presents the view of an earnest, pure-minded Christian, with a heart overflowing with the greatest of Gospel virtues—charity—striving to live, with his utmost ability, as the great Head of the Church counseled; mild and unassuming, but never compromising with evil; actuated by high principle and strict integrity of heart, he was still urbane and courteous to all with whom he came in contact, and this, not assumed with the view of seeking popularity, but flowing as naturally as sweet water from a pure fountain.

"The good man's arms are folded now,  
The great man's race is run;  
The warm, true heart and thought-worn brow  
Rest, for their work is done."

J. P. R.